NEANDC(J)86/U
(INDC(JAP)73/L)

(JAERI-M
82-096)

EVALUATION OF NEUTRON NUCLEAR DATA FOR ^{241}Am AND ^{243}Am

August 1982

Yasuyuki KIKUCHI

日本原子力研究所
Japan Atomic Energy Research Institute

JAERI-M レポートは，日本原子力研究所が不定期に公刊している研究報告書です。

入手の問合わせは，日本原子力研究所技術情報部情報資料課（〒319—11 茨城県那珂郡東海村）あて，お申しこしください。なお，このほかに財団法人原子力弘済会資料センター（〒319—11 茨城県那珂郡東海村日本原子力研究所内）で複写による実費領布をおこなっております。

JAERI-M reports are issued irregularly.

Inquiries about availability of the reports should be addressed to Information Section, Division of Technical Information, Japan Atomic Energy Research Institute, Tokai-mura, Naka-gun, Ibaraki-ken 319—11, Japan.

編集兼発行　日本原子力研究所
印　　刷　日立高速印刷株式会社

Evaluation of Neutron Nuclear Data for ^{241}Am and ^{243}Am

Yasuyuki KIKUCHI

Division of Physics,
Tokai Research Establisment, JAERI

(Received July 12, 1982)

Neutron nuclear data of ^{241}Am and ^{243}Am were evaluated for JENDL-2. Evaluated quantities are the total, elastic and inelastic scattering, fission, capture, (n,2n), (n,3n) and (n,4n) reaction cross sections, the resolved and unresolved resonance parameters, the angular or energy distribution of the emitted neutrons, and the average number of neutrons emitted per fission. The fission cross section was evaluated on the basis of newly measured data, and lower values than JENDL-1 were given in the subthreshold energy region. The reliability of the calculation parameters are also much improved, because experimental data became available for the total and capture cross sections of ^{241}Am in the high energy region.

Keywords: Americium-241, Americium-243, Evaluation JENDL-2, Fission, Capture, Resonance Parameters, Optical Model, Statistical Model.

This work was performed under contracts between Power Reactor and Nuclear Fuel Development Corporation and JAERI.

^{241}Am と ^{243}Amの中性子核データの評価

日本原子力研究所東海研究所物理部
菊池　康之

（1982年7月12日受理）

JENDL－2のために ^{241}Am と ^{243}Amの中性子核データの評価を行った。評価量は全断面積，弾性・非弾性散乱，核分裂，捕獲，（n，2n），（n，3n），（n，4n）反応の各断面積，分離・非分離共鳴パラメータ，二次中性子の角度およびエネルギー分布，核分裂当りの平均放出中性子数および核分裂スペクトルである。核分裂断面積は最近の実験値に基いて評価し，閾値以下のエネルギー領域においてはJENDL－1よりかなり低くなった。また ^{241}Amにおいて高エネルギー領域の全断面積や捕獲断面積の実験値の入手により，計算パラメータの信頼性も向上した。

本報告書は，日本原子力研究所が動力炉・核燃料開発事業団の委託により行った研究の成果である。

Contents

目　　次

1. Introduction

Neutron nuclear data of Am and Cm isotopes are much required to predict production of long-lived high-level radioactive waste. Hence we have made the evaluation of these nuclides for Japanese Evaluated Nuclear Data Library under contracts with Power Reactor and Nuclear Fuel Development Corporation. Until now evaluation was made for ^{241}Am[1,2], ^{242m}Am[3], ^{242g}Am[3], ^{243}Am[4], ^{242}Cm[5], ^{243}Cm[6], ^{244}Cm[7] and ^{245}Cm[8].

The evaluation for ^{241}Am and ^{243}Am was made in 1975 and 1976, respectively*. At that time, the experimental data were so scarce that the uncertainties of the evaluated data were considerably large. Since then lots of experimental works have been made. Comparing the evaluated data with these newly measured ones, it was found that many discrepancies existed between them. Hence it was decided to reevaluate the data of ^{241}Am and ^{243}Am for JENDL-2.

This report describes the method and results of the reevaluation work. Chapters 2 and 3 are devoted to ^{241}Am and ^{243}Am, respectively. The results are given in Appendix with ENDF/B format.

---

* In JENDL-1, only the data of ^{241}Am were contained. The previous evaluation of ^{243}Am was made after releasing JENDL-1. In this report, however, the previous evaluation of ^{243}Am is also refered as JENDL-1.

2. Americium-241

2.1 Status of Newly Measured Data

In early 1970's there existed large discrepancies among the measured subthreshold fission cross sections below 50 keV. The data of Seeger et al.[9] are larger (more than a factor of 10) than the data of Bowman et al.[10] and of Shpak et al.[11] Though the data of Seeger et al. obtained from the bombshot experiment looked too high, they affected many evaluations including ENDF/B-IV, ENDL and JENDL-1. At that time, on the other band, there were no available experimental data either for the fission cross section above 7 MeV or for the total and capture cross sections above the resonance region.

Since then intensive experimental works have been made on the ^{241}Am cross sections. The newly measured fission cross section data are:

Gayther and Thomas[12]	(1977) ;	E_n = 50 eV ∿ 9 keV
Cance et al.[13]	(1977) ;	E_n = 930 keV ∿ 2.7 keV
Kupriyanov et al.[14]	(1978) ;	E_n = 130 keV ∿ 7 MeV
Knitter and Budtz-Jørgensen[15]	(1978) ;	E_n = 150 eV ∿ 5.4 MeV
Wisshak and Käppeler[16]	(1980) ;	E_n = 10 keV ∿ 250 keV
Behrens and Browne[17]	(1981) ;	E_n = 200 keV ∿ 30 MeV
Hage at al.[18]	(1982) ;	E_n = 22 keV ∿ 1 MeV.

All the newly measured data support the lower cross section in the subthreshold energy region below 50 keV. Furthermore, the data of Behrens and Browne give the cross section shape above 7 MeV.

The capture or absorption cross section was also measured by three different laboratories:

Weston and Todd[19] (1976) ; E_n = 0.01 eV ∿ 370 keV

Gayther and Thomas[12] (1976) ; E_n = 100 eV ∿ 500 keV

Wisshak and Käppeler[16] (1980) ; E_n = 10 keV ∿ 250 keV.

The total cross section was also measured:

Derrien and Lucas[20] (1975) ; E_n = 0.8 eV ∿ 1 keV

Phillips and Howe[21] (1979) ; E_n = 500 keV ∿ 25 MeV.

2.2 Thermal Cross Sections

The thermal capture or absorption cross section has been often measured in the pile spectrum. Assuming the 1/v cross section below the Cd cut-off energy, the 2200 m/s value was recommended in BNL-325, 3rd edition as 832 ± 20 barns, which is apparently larger than the measured thermal total cross section values lying between 600 and 640 barns. This inconsistency comes mainly from existence of a large resonance at 0.3 eV. Taking account of the non 1/v behavior of the ^{241}Am cross section, Lynn et al.[22] recommended the following values as the cross section at 0.0253 eV:

$\sigma_{n,T}$ = 615 ± 20 barns

$\sigma_{n,\gamma}$ = 600 ± 20 barns

$\sigma_{n,f}$ = 3.1 ± 0.2 barns

$\sigma_{n,n}$ = 11.9 ± 2 barns.

We adopted these values in the present work.

2.3 Resonance parameters

2.3.1 Resolved Resonance Parameters

The measured resonance parameters were collected and stored in Resonance Parameter Storage and Retrieve System, REPSTOR[23]. The stored parameters are listed in Table 1 as well as the evaluated data including the present ones. The evaluation of JENDL-1 is mainly based on the measurements by Derrien and Lucas[20]. Since then newly measured data were reported by Weston and Todd[19], by Gayther and Thomas[12] and by Knitter and Budtz-Jørgensen[15]. These new measurements cover much narrower energy range than the data of Derrien and Lucas. After examining these new measurements, we found no positive reason to revise the data of JENDL-1. Hence we adopted the data of JENDL-1.

It was pointed out[2], however, that the resonance parameters of JENDL-1 considerably underestimated the thermal cross sections. In JENDL-1, the discrepancy was adjusted by applying the 1/v type background cross sections. On the other hand, Lynn et al.[22] resolved this discrepancy by assuming 5 negative resonances. In the present work, we also assumed the negative resonances at the same energies that Lynn et al. did, and adjusted the neutron and fission widths so that the calculated total, capture and fission cross sections might agree with the adopted cross sections described in section 2.2. We assumed the effective radius of 9.37 fm which was obtained from the optical model calculation. The finally adopted negative resonance parameters are given as:

E_n (eV)	J	Γ_n (meV)	Γ_γ (meV)	Γ_f (meV)
-0.5	2.5	0.0890	43.77	0.2
-0.45	"	0.0604	"	"
-0.4	"	0.0797	"	"
-0.32	"	0.0510	"	"
-0.2	"	0.0549	"	"

The calculated cross sections at 0.0253 eV are

$\sigma_{n,T}$ = 614.7 barns
$\sigma_{n,\gamma}$ = 600.4 barns
$\sigma_{n,f}$ = 3.02 barns
$\sigma_{n,n}$ = 11.26 barns,

which agree with the adopted values.

The calculated total, capture and fission cross sections are compared with the measured ones in Figs. 1, 2 and 3, respectively. The agreement is satisfactory.

2.3.2 Unresolved Resonance Parameters

The unresolved resonance parameters were not adopted in JENDL-1, because the self-shielding effect is negligible for treating the Am isotopes built up in fast reactors. Recently, however, the reactivities of Am isotopes were measured in the FCA facility. For analyses of such experiments, the self-shielding correction is required. Hence the

unresolved resonance parameters were supplied for JENDL-2 in the energy range between 150 eV and 30 keV.

The total, fission and capture cross sections were first evaluated on the basis of the newly measurements. The evaluation method will be described in the next section. Then the unresolved resonance parameters were determined with ASREP[24] code so as to reproduce the evaluated cross sections.

First the observable level spacing was determined so as to reproduce the global trends of the capture and total cross sections by assuming the values obtained from the optical model for the s- and p-wave strength functions and the effective scattering radius. Then the s- and p-wave strength functions and the fission widths were searched for so that the total, fission and capture cross sections might be well reproduced at each energy point. In this search, the ratio of s-wave to p-wave strength function were kept constant and the same value of the fission width were assumed to all the J-states.

The energy dependence of the unresolved resonance parameters are given in Table 2 with the calculated cross sections.

2.3.3 Resonance Integrals

The fission and capture integrals were calculated from the presently evaluated resonance parameters, assuming a cut-off energy of 0.5 eV. The results are compared in Table 3 with the measured values and with those calculated from various evaluated resonance parameters.

The measured values of the capture resonance integral are much spreaded and all the calculated values lie within this spread. The large spread was partly explained by Lynn et al.[22]; the existence of

a strong resonance at 0.3 eV shifts the effective Cd cut-off energy to lower energies which depend on the thickness of the Cd cover and the neutron spectrum.

On the other hand, the calculated values of the fission resonance integral are considerably lower than the measured ones which are all greater than 20 barns. The reason of this disagreement is not clear and should be further investigated. Lynn et al. pointed out the possibility of the effect from some inpurities such as ^{242m}Am.

2.4 Cross Sections above Resonance Region

2.4.1 Fission Cross Section

Considerable number of new measurements have been reported concerning the fission cross section. All the newly measured data deny the high subthreshold fission cross section reported by Seeger et al.[9] Hence we ignored the data of Seeger et al. in the present work. Most of the newly measured data[15~18] are given as the ratio of $\sigma_{n,f}(^{241}\text{Am})$ to $\sigma_{n,f}(^{235}\text{U})$. The absolute values of the fission cross section were deduced by using the fission cross section of ^{235}U adopted in JENDL-2.

The evaluation was made with the eye-guide manner by using NDES[31]. Comparing the experimental condition, particularly the ^{239}Pu contamination in ^{241}Am sample, we mainly adopted the data of Knitter and Budtz-Jørgensen[15] in the energy range between 150 eV and 10 keV, those of Wisshak and Käppeler between 10 and 300 keV and those of Behrens and Browne above 300 keV. The data of Behrens and Browne are about 10 % higher than those of Knitter and Budtz-Jørgensen and of Shpak et al.[11] However, we took the data of Behres and Browne, because they cover the energy region above 6 MeV up to 30 MeV and because the data of

Behrens et al. were mainly adopted in the evaluation of the other heavy nuclei for JENDL-2. The evaluated cross section is shown with the measured data in Figs. 4 ∿ 6.

2.4.2 Total Cross Section and Optical Model

At the time of the previous evaluation, no measurement was reported on the total cross section above keV region. Hence the optical potential parameters were determined by slightly modifying the parameters used for evaluation[32] of the inelastic scattering cross section of ^{238}U. After that the total cross section of ^{241}Am was measured by Phillips and Howe[21] in the energy range from 500 keV to 25 MeV.

Igarasi and Nakagawa[5] obtained the optical potential parameters which reproduce these measured total cross section data. The precise discussion is given in Ref. (5). This potential parameter set has been used for the evaluation of ^{242m}Am, ^{242g}Am, ^{242}Cm and ^{243}Cm. This potential set was also used in the present evaluation. The potential parameters are:

$$V = 43.4 - 0.107\ E_n \quad \text{(MeV)}$$

$$W_s = 6.95 - 0.339\ E_n + 0.0531\ E_n^2 \quad \text{(MeV)}$$

$$V_{so} = 7.0 \quad \text{(MeV)}$$

$$r_o = r_{so} = 1.282 \quad \text{(fm)}$$

$$r_s = 1.29 \quad \text{(fm)}$$

$$a = a_{so} = 0.60 \quad \text{(fm)}$$

$$b = 0.5 \quad \text{(fm)}$$

The derivative Wood-Saxon form was assumed to the surface absorption term and no volume absorption was assumed. Figure 7 shows the total cross section calculated from the present potential and the measured data of Phillips and Howe. The present potential reproduces satisfactorily the experimental data. It was also found that the calculated total cross section agreed with the data of Derrien and Lucas[20] below 1 keV.

Hence the calculated total cross section was adopted in the present evaluation.

2.4.3 Capture Cross Section

Since the previous work, three measurements have been reported concerning the capture cross section in keV region. However, there exists considerable discrepancy between the data of Weston and Todd[19] and of Gayther and Thomas[12] in the energy region between 10 and 100 keV. To resolve this discrepancy, Wisshak and Käppeler[16] measured the capture cross section between 10 and 250 keV and their data agree very well with the data of Gayther and Thomas.

In the present work, the data of Gayther and Thomas were mainly adopted up to 350 keV. In the energy region above 350 keV where no experimental data exist, the statistical model calculation was applied. In the calculation, the γ-ray strength function was adjusted so that the calculated cross section might be connected smoothly with the data of Gayther and Thomas at 350 keV. It was found that the calculated capture cross section agreed very well with the data of Gayther and Thomas in the energy range between 30 and 350 keV. Hence we adopted the calculated values in this energy range. In the unresolved resonance

region below 30 keV, the structure observed in the data of Gayther and Thomas was reproduced with the unresolved resonance parameters. The presently evaluated capture cross section is shown in Fig. 8.

2.4.4 Other Cross Sections

The (n,2n), (n,3n) and (n,4n) reaction cross sections were calculated with Pearlstein's method[33] based on the evaporation model. The neutron emission cross section approximated to the difference between the compound nucleus formation cross section and the fission cross section, because the charged particle emission and the compound elastic scattering cross sections are negligibly small.

Taking account of the (n,2n), (n,3n), (n,4n) and fission cross section as the competing process, the capture, elastic and inelastic scattering cross sections were calculated with the statistical model code CASTHY[34]. The γ-ray strength function was adjusted so that the calculated capture cross section might be 830 mb at 350 keV. Fifteen discrete levels were taken into account up to 670 keV and levels above 732 keV were assumed to be overlapping.

The level scheme of the discrete levels was taken from Table of Isotope, 7th edition[35] and is shown in Table 4. The level density parameters were taken from the recommendation by Gilbert and Cameron[36]. The Q-values of (n,2n), (n,3n) and (n,4n) reactions were obtained from the compilation of Wapstra and Bos[37]. These values are also shown in Table 4.

2.5 Other Quantities

2.5.1 Average Number of Neutrons Emitted per Fission

Three measurements were reported for the average number of prompt neutron ν_p for thermal neutron fission. JENDL-1 adopted $\nu_p = 3.219$ according to the newest data of Jaffey and Lerner[38]. The energy dependence was estimated from the neutron binding energy. As no new measurement has been done since then, the same value was adopted in the present work:

$$\nu_p = 3.219 + 0.15\ \mathrm{En.}$$

As no measurement has been reported on the number of delayed neutrons, we estimated ν_d from the systematics proposed by Tuttle[39]:

$$\nu_d = \exp[13.81 + 0.1754(Ac-3Z)(Ac/Z)],$$

where Ac is the mass number of the compound nucleus and Z the atomic number. We also assumed that (n,n'f) process was dominant after its channel open ($E \gtrsim 6 \sim 8$ MeV). Under these assumptions, the presently evaluated value is

$$\nu_d = 0.0045 \quad \text{for} \quad E < 6.2\ \text{MeV},$$
$$\quad\ 0.0031 \quad \text{for} \quad E > 8\ \ \text{MeV}.$$

Both values are linearly connected between 6.2 and 8 MeV.

As to the decay constansts and fraction of delayed neutrons, the values for ^{240}Pu was assumed, and the evaluated data by Tuttle[40] were adopted.

2.5.2 Angular Distribution of Emitted Neutrons

The angular distribution of the elastically scattered neutrons were calculated with the optical model. The 90° symmetric scattering in the center of mass system was assumed for the inelastic scattering.

2.5.3 Energy Distribution of Emitted Neutrons

The simple evaporation spectrum was assumed for the inelastically scattered neutrons which leave the residual nucleus in continuum excited states (MT = 91). The nuclear temperature (θ) was determined from the relation

$$E = a\theta^2 - \theta,$$

where E is the incident neutron energy and a is the level density parameters of the residual nucleus.

As to the (n,2n) and (n,3n) reactions, we assumed the successive evaporation model. For the (n,2n) process, the first neutron evaporates leaving the residual nucleus in the excited states higher than the neutron separation energy, and then the second neutron evaporates from the excited states. In calculating the temperature for the second neutron, we assumed that the second neutorn evaporated from a excited state corresponding the average energy of the first neutron. In the ENDF/B format, the temperature of each neutron is stored independently in each subsection.

2.5.4 Fission Spectrum

The Maxwellian spectrum was adopted in the present work. As no measured data exist, the temperature was determined from the systematics of the average neutron energy on A and Z obtained by Smith et al.[40] The obtained temperature is 1.389 MeV, by taking a reference ^{252}Cf average fission neutron energy of 2.13 MeV as recommended by Grundl and Eisenhauer[41].

2.6 Discussion

The presently evaluated cross sections are shown in Fig. 9. The present evaluation was made on the basis of newly measured data, and the results are very different from the previous JENDL-1 data or ENDF/B-IV data.

Most significant improve is observed in the subthreshold fission cross section below 100 keV. The high values of Seeger et al. were completely denied by the newly measured data. The too high data of Seeger et al. are now believed to be caused by leakage of capture signal to fission signal. The present fission cross section in MeV region based on the data of Behrens and Browne is about 10 % higher than the other data. More experimental efforts are required in this energy region. However the shape of fission cross section above 6 MeV must be reliable.

The capture cross section in keV region was evaluated on the experimental data of Gayther and Thomas and must be much more reliable than the old evaluation.

As to the thermal cross section, careful examination of non 1/v behavior by Lynn et al. solved the apparent inconsistency between the total and capture cross sections at 0.0253 eV. We accepted their results. The cross section values below 1 eV were well reproduced with the resonance parameters by adding some negative resonances.

The existence of a resonance at 0.3 eV makes the definition of resonance integral rather uncertain. However, the disagreement between the calculated and measured values for the fission integral is too large to be explained from the uncertainty of the Cd cut-off energy. Further experimental work is required.

It was pointed out by Smith et al.[41] that the ^{252}Cf average fission neutron energy of 2.13 MeV might be too soft (about 50 keV). This problem should be further investigated in U or Pu isotopes for which lots of measured data are available.

3. Americium-243

3.1 Status of Newly Measured Data

Comparing with ^{241}Am, new measurements are scarce for ^{243}Am. However, some important measured data becomes available. Behrens and Browne[17] measured the fission cross section ratio of $\sigma_{n,f}(^{243}Am)$ to $\sigma_{n,f}(^{235}U)$ in the energy range from 200 keV to 30 MeV. Asghar et al.[43] and Gavrilov et al.[30] measured the thermal fission cross section and showed that the thermal fission cross section was not so small as previously believed.

On the other hand, recent measurements of the subthreshold fission cross section of ^{241}Am denied the high values of Seeger et al., as discussed before. This suggests that the data of Seeger et al. are also unreliable for the subthreshold fission cross section of ^{243}Am. This means that no reliable data exist in the energy region below 100 keV.

Neither total nor capture cross section has so far been reported.

3.2 Thermal Cross Sections

Lots of measured data were reported for the thermal capture cross section. They were measured in various pile spectra. BNL-325, 3rd edition recommended 79.3 $\pm$ 2.0 b. Though ^{243}Am has a small resonance below the Cd cut-off energy, the 1/v behavior is not much affected by this small resonance. Hence we adopted the recommendation of BNL-325.

The fission cross section in the thermal region was believed to be very small (less than 70 mb[44]). Recently, however, Asghar et al.[43] made a very precise measurements by using the cold neutron beam. Asghar et al. reported 198.3 $\pm$ 4.2 mb for neutrons with a 25 °K Maxwellian distribution. However, they made an inconsistent normalization for the

^{235}U fission cross section used as a standard. Correcting this inconsistency, Lemmel[45] deduced 784 mb ± 10 % for 25 °K neutrons, which corresponds to 226 mb at 0.0253 eV by assuming the 1/v cross section shape. This value agrees with (200 ± 100) mb reported by Gavrilov et al.[30] We adopted 225 ± 25 mb in the present work.

No new measurements have so far been reported on the thermal total cross section since BNL-325, 3rd edition. We adopted the recommended value of BNL-325.

The presently adopted values at 0.0253 eV are:

$\sigma_{n,T}$ = 85 ± 4 barns
$\sigma_{n,\gamma}$ = 79.3 ± 2.0 barns
$\sigma_{n,f}$ = 0.225 ± 0.025 barns.

3.3 Resonance Parameters

3.3.1 Resolved Resonance Parameters

The measured resonance parameters were collected and stored in REPSTOR, and are shown in Table 5. The evaluation of JENDL-1 was mainly based on the measurements by Simpson et al.[46]

As for the neutron and radiation widths, we used the same value as JENDL-1, because no extensive work has been reported. We adjusted slightly the parameters of a negative resonance in order to obtain better agreement of the thermal capture and total cross sections.

As to the fission width, no measured values were reported. JENDL-1 assumed a step-wise increasing fission widths so as to obtain a smooth connection to the data of Seeger et al.[9] at the upper limit energy of 215 eV. In the present work, we abandoned the data of Seeger et al. and

assumed a constant value of Γ_f for all the resonances. The value of Γ_f were determined so that the calculated fission cross section might be 225 mb at 0.0253 eV.

The fission widths thus determined is 0.12 meV and the negative resonance parameters are

$$E_n = -2.0 \text{ eV}, \Gamma_n = 1.4 \text{ meV}, \Gamma_\gamma = 39 \text{ meV}, \Gamma_f = 0.12 \text{ meV}.$$

The calculated cross sections at 0.0253 eV are

$$\sigma_{n,T} = 86.2 \text{ barns}$$
$$\sigma_{n,\gamma} = 78.5 \text{ barns}$$
$$\sigma_{n,f} = 0.228 \text{ barns},$$

which agree with our adopted values. The calculated total, capture and fission cross sections in the thermal energy region are shown in Figs. 10 ∿ 12.

3.3.2 Unresolved Resonance Parameters

The unresolved resonance parameters are defined in the energy region between 215 eV and 30 keV. As no experimental data exist in this energy region except the total cross section below 1 keV, we applied the s-wave and p-wave strength functions and the effective scattering radius obtained from the optical model calculation. The radiation and fission widths and the observable level spacing were obtained by averaging the resolved resonance parameters.

The presently adopted unresolved resonance parameters are given in Table 6.

3.3.3 Resonance Integrals

The fission and capture resonance integrals calculated from the present resonance parameters are compared in Table 7 with the measured data as well as the values calculated from JENDL-1 and ENDF/B-V parameters.

The present fission integral is about two times larger than the values of JENDL-1 and ENDF/B-V and lies within the spread of the measured data. This comes from our giving the fission with of 0.12 meV to all the levels. As to the capture integral, on the other hand, all the calculated values are considerably lower than the measured data. As the small resonance at 0.31 eV may not affect the Cd cut-off energy so much, this disagreement between the calculated and the measured capture intgrals is left unresolved.

3.4 Cross Sections above Resonance Region

3.4.1 Fission Cross Section

The evaluation was made on the basis of the data of Behrens and Browne[17] in the energy region above 200 keV. The evaluated curve was drawn with the eye-guide manner. No reliable experimental data exist below 200 keV, since we abandoned the data of Seeger et al. In the present work, a smooth curve was drawn with the eye-guide manner to connect the cross section curves obtained from the unresolved resonance parameters below 30 keV and obtained from the measured data above 200 keV. As is seen in Fig. 13, the connection is very smooth. This suggests that the present treatment of the fission cross section is reasonable as a whole. The presently evaluated fission cross sections are compared with the measured data as well as those of JENDL-1 and ENDF/B-V in Figs. 13 ∿ 15.

3.4.2 Other Cross Sections

The evaluation of all the other cross sections were made with the optical, statistical and evaporation models, as no experimental data were available.

The same optical potential parameters and the same calculation procedure were used as in the case of ^{241}Am. The γ-ray strength function was determined from the average radiation width and the mean level spacing in the resolved resonance region. The level scheme, the level density parameters and the Q-values of (n,2n), (n,3n) and (n,4n) reactions are shown in Table 6.

The calculated total and capture cross sections are shown in Figs. 16 and 17 with the other evaluated curves.

3.5 Other Quantities

3.5.1 Average Number of Neutrons Emitted per Fission

As no measured data are available on ν-values for ^{243}Am, JENDL-1 estimated ν_p-values from the systematics. In the present work, the same value was adopted:

$$\nu_p = 3.2 + 0.16\ \mathrm{En.}$$

The average number of delayed neutrons were estimated with the same method as used for ^{241}Am. The result is

$$\nu_d = 0.0095 \quad E < 6\ \mathrm{MeV},$$
$$= 0.0065 \quad E > 8\ \mathrm{MeV}.$$

As to the decay constants and the fraction, the values for ^{240}Pu were also adopted.

3.5.2 Angular and Energy Distribution of Emitted Neutrons

The same procedure as used for ^{241}Am was adopted.

3.5.3 Fission Spectrum

The same method was used as in the case of ^{241}Am. The temperature was estimated from systematics on Z^2/A and is 1.377 MeV.

3.6 Discussion

The presently evaluated cross sections are shown in Fig. 18. Scanty experimental data of this nuclide leave considerable uncertainties on the evaluated cross sections.

The present fission cross section is very different from that of JENDL-1 or ENDF/B-V. Abandoning the high subthreshold fission cross section of Seeger et al.[9], we assumed consistent low fission cross section values both in the thermal and resonance regions. The fission width of 0.12 meV, which was obtained by fitting the calculated thermal fission cross section to the recent data of Asghar et al.[32] and of Gavrilov et al.[33], gives reasonable fission cross section values in the unresolved resonance region. The connection is very smooth between the cross sections calculated from the unresolved resonance parameters below 30 keV and those above 200 keV which were evaluated on the basis of reliable experimental data. This suggests the consistency and reliability of the presently evaluated fission cross section.

4. Concluding Remarks

Reevaluation work was made on the neutron nuclear data for ^{241}Am and ^{243}Am. The results will be stored in JENDL-2.

The present evaluation is based on lots of new measurements published after the previous JENDL-1 work. The high subthreshold fission cross sections obtained by the bombshot experiments were denied by these experiments. As to ^{241}Am the evaluation of the fission and capture cross sections were made mainly on the basis of the measured data and its reliability is expected to be high. For ^{243}Am, on the other hand, very scanty experimental data leave the evaluated data considerably uncertain. Particularly no measurements are available for the subthreshold fission cross section after denying the bombshot data. New measurements are much required.

Acknowledgment

The author wishes to thank S. Igarasi for his helpful discussion. He also thanks T. Narita and T. Mimura for their aid in treating numerical data. He also acknowledges K. Shimizu for her assistance in computation. Careful typewriting by H. Terakado is much appreciated. This work was made under contracts between Power Reactor and Nuclear Fuel Development Corporation and Japan Atomic Energy Research Institute.

Reference

1) Igarasi S.: J. Nucl. Sci. Technol., 14, 1 (1977) and Igarasi S.: "Evaluation of ^{241}Am Nuclear Data", JAERI-M 6221 (1975) [in Japanese].

2) Nakagawa T., Fuketa T. and Igarasi S.: "Evaluation of the Neutron Data of ^{241}Am", JAERI-M 6636 (1976) [in Japanese].

3) Nakagawa T. and Igarasi S.: "Evaluation of Neutron Nuclear Data for ^{242m}Am and ^{242g}Am", JAERI-M 8903 (1980) [in Japanese].

4) Igarasi S. and Nakagawa T.: "Evaluation of Neutron Nuclear Data for ^{243}Am", JAERI-M 7174 (1977) [in Japanese].

5) Igarasi S. and Nakagawa T.: "Evaluation of Neutron Nuclear Data for ^{242}Cm", JAERI-M 8342 (1979) [in Japanese].

6) Nakagawa T. and Igarasi S.: "Evaluation of Neutron Nuclear Data for ^{243}Cm", JAERI-M 9601 (1981).

7) Igarasi S. and Nakagawa T.: "Evaluation of Neutron Nuclear Data for ^{244}Cm", JAERI-M 7175 (1977) [in Japanese].

8) Igarasi S. and Nakagawa T.: "Evaluation of Neutron Nuclear Data for ^{245}Cm", JAERI-M 7733 (1978) [in Japanese].

9) Seeger P. A., Hemmendinger A. and Diven B. C.: Nucl. Phys., A96, 605 (1967).

10) Bowman C. D., Coops M. S., Auchampaugh G. F. and Fultz S. C.: Phys. Rev., 137, B326 (1965).

11) Shpak D. L., Ostapenko Yu. B. and Smirenkin G. N.: JEPT Lett., 10, 175 (1969).

12) Gayther D. B. and Thomas B. W.: Proc. 4th All Union Conf. on Neutron Physics, Kiev, 1977, Vol. 3, p. 3 (1977).

13) Cance M., Gimat D., Grenier G. and Parisot D.: "Compte Rendu d'Activité du Service de Physique Nucléaire pour l'Année 1976", CEA-N-1969, p. 57 (1977).

14) Kupriyanov V. M., Fursov B. I., Ivanov V. I. and Smirenkin G. N.: Sov. At. Energy, 45, 1176 (1979).

15) Knitter H. H. and Budtz-Jørgensen C.: Atomkernenergie, 33, 205 (1979).

16) Wisshak K. and Käppeler F.: Nucl. Sci. Eng., 76, 148 (1980).

17) Behrens J. W. and Browne J. C.: Nucl. Sci. Eng., 77, 444 (1981).

18) Hage W., Wisshak K. and Käppeler F.: Nucl. Sci. Eng., 78, 248 (1981).

19) Weston L. W. and Todd J. H.: Nucl. Sci. Eng., 61, 356 (1976).

20) Derrien H. and Lucas B.: "Nuclear Cross Sections and Technology", Proc. Conf., Washington D. C., March 3 - 7, 1975, p. 637, NBS Special Publication 425 (1975).

21) Phillips T. W. and Howe R. E.: Nucl. Sci. Eng., 69, 375 (1979).

22) Lynn J. E., Patrick B. H., Sowerby M. G. and Bowey E. M.: "Evaluation of Differential Nuclear Data for Americium Isotopes. Part I: ^{241}Am", AERE-R 8528 (1979).

23) Nakagawa T.: Proc. 1978 Seminar on Nuclear Data, Dec. 20 - 21, 1978, Tokai, p. 51, JAERI-M 8163 (1979) [in Japanese].

24) Kikuchi Y.: Unpublished.

25) Bak M. A., Krivokhatskii A. S., Petrzhak K. A., Petrov Yu. G., Romanov Yu. F. and Shlyamin E. A.: Sov. At. Energy, 23, 1059 (1967).

26) Schuman R. P. and Berreth J. R.: "Resonance Integral Measurements", IN-1296 (1969).

27) Hellstrand E., Phelps J., Sastre C.: "Studies of the Capture Cross Section of ^{237}Np and ^{241}Am in Different Reactor Spectra", BNL-50242 (1970).

28) Harbour R. M., MacMurdo K. W. and McCrosson F. J.: Nucl. Sci. Eng., 50, 364 (1973).

29) Zhuravlev K. D., Kroshkin N. I. and Chetverikov A. P.: Sov. At. Energy, 39, 907 (1975).

30) Gavrilov V. D., Goncharov V. A., Ivanenko V. V., Kustov V. N. and Smirnov V. P.: Sov. At. Energy, 41, 808 (1976).

31) Nakagawa T.: J. At. Energy Soc. Jpn., 22, 559 (1980) [in Japanese].

32) Igarasi S., Nakamura H., Murata T. and Nishimura K.: "Nuclear Data for Reactors", Conf. Proc. Helsinki, 15 - 19 June 1970, p. 869, IAEA (1970).

33) Pearlstein S.: Nucl. Sci. Eng., 23, 238 (1965).

34) Igarasi S.: J. Nucl. Sci. Technol., 12, 67 (1975).

35) Lederer C. M. and Shirley V. S.: "Table of Isotopes", 7th Edition (1978).

36) Gilbert A. and Cameron A. G. W.: Can. J. Phys., 43, 1446 (1965).

37) Wapstra A. H. and Bos K.: Atomic Data and Nuclear Data Tables, 19, No. 3 (1977).

38) Jaffey A. H. and Lerner J. L.: Nucl. Phys., A145, 1 (1970).

39) Tuttle R. J.: Proc. Consultant's Meeting on Delayed Neutron Properties, Vienna, 26 - 30 March 1979, p. 29, INDC(NDS)-107/G+Special (1979).

40) Tuttle R. J.: Nucl. Sci. Eng., 56, 37 (1975).

41) Smith A., Guenther P., Winkler G. and McKnight R.: "Prompt-Fission-Neutron Spectra of ^{233}U, ^{235}U, ^{239}Pu and ^{240}Pu Relative to That of ^{252}Cf", ANL/NDM-50 (1979).

42) Grundl J. A. and Eisenhauer C. M.: "Nuclear Cross Sections and Technology", Proc. Conf. Washington D. C., March 3 - 7, 1975, p. 250, NBS Special Publication 425 (1975).

43) Asghar M., Caitucoli F., Perrin P., Barreau G. and Leroux B.: Ann. Nucl. Energy, 6, 561 (1979).

44) Hulet E. K., Hoff R. W., Bowman H. R. and Michel M. C.: Phys. Rev., 107, 1294 (1957).

45) Lemmel H. D.: Private communication to S. Igarasi (1980).

46) Simpson O. D., Simpson F. B., Harvey J. A., Slaughter G. G., Benjamin R. W. and Ahlfeld: Nucl. Sci. Eng., 55, 273 (1974).

47) Butler J. P., Lounsbury M. and Merrit J. S.: Can. J. Phys., 35, 147 (1957).

48) Folger R. L., Smith J. A., Brown L. C., Overman R. F. and Halcomb H. P.: "Neutron Cross Section and Technology", Proc. Conf. Washington D. C., March 4 - 9, 1968, p. 1279, NBS Special Publication 299 (1968).

Table 1 Resonance parameters of ^{241}Am

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH* (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS**	REFERENCE
-0.50	2.5	44.0590	0.08903	43.77	0.2	L = 0	JENDL-2
-0.500	3.0		A 0.0842	44.2	0.2041		79UKNDL
-0.45	2.5	44.0304	0.06038	43.77	0.2	L = 0	JENDL-2
-0.450	2.0		A 0.0571	44.4	0.2041		79UKNDL
-0.425			A 0.6				76KALEBIN+
-0.40	2.5	44.0497	0.07973	43.77	0.2	L = 0	JENDL-2
-0.400	3.0		A 0.0754	44.4	0.2041		79UKNDL
-0.32	2.5	44.0210	0.05096	43.77	0.2	L = 0	JENDL-2
-0.320	2.0		A 0.0482	44.2	0.2041		79UKNDL
-0.22	2.5	46.271	0.081	45.8	0.39	L = 0	ENDF-B-5
-0.22			A 0.081	45.8			76WESTON+
-0.20	2.5	44.0249	0.05488	43.77	0.2	L = 0	JENDL-2
-0.200	3.0		C 0.0519	44.2	0.2041		79UKNDL
0.308	2.5	44.12	0.06	43.77	0.29	L = 0	JENDL-2
0.308	2.0		A 0.054	46.9	0.31		79UKNDL
0.31	2.5	47.244	0.054	46.9	0.29	L = 0	ENDF-B-5
0.308	2.5	44.12	0.06	43.77	0.29	L = 0	JENDL-1
0.306			A 0.06 ± 0.003	36.0 ± 4.0			59BLOCK+
0.307					0.25	GFS= 52.0	59LEONARD+
0.305						WGO= 0.108± 0.006	61SLAUGHTER+
0.31		48.0 ± 5.0			0.31 ± 0.07		65BOWMAN+
0.306			A 0.06 ± 0.006				66GERASIMOV
0.306± 0.002		45.0 ± 1.0	A 0.0556± 0.0004				76KALEBIN+
0.31			A 0.054± 0.001	46.9 ± 0.3	(0.29)		76WESTON+
0.576	2.5	43.985	0.075	43.77	0.14	L = 0	JENDL-2
0.576	3.0		A 0.093	47.3	0.23		79UKNDL
0.584	2.5	47.563	0.093	47.3	0.17	L = 0	ENDF-B-5
0.576	2.5	43.985	0.075	43.77	0.14	L = 0	JENDL-1
0.575			A 0.075± 0.007	34.0 ± 3.0			59BLOCK+
0.579					0.05	GFS= 15.0	59LEONARD+
0.575						WGO= 0.098± 0.01	61SLAUGHTER+
0.575		60.0 ±10.0			0.23 ± 0.06		65BOWMAN+
0.575			A 0.074± 0.008				66GERASIMOV
0.573± 0.004		43.0 ± 1.0	A 0.0928± 0.0016				76KALEBIN+
0.584			A 0.093± 0.001	47.3 ± 0.3	(0.17)		76WESTON+
1.276	2.5	47.192	0.322	46.5	0.37	L = 0	JENDL-2
1.276	2.0		A 0.318	47.9	0.37		79UKNDL
1.279	2.5	49.814	0.314	49.2	0.3	L = 0	ENDF-B-5
1.276	2.5	47.192	0.322	46.5	0.37	L = 0	JENDL-1
1.275			A 0.39 ± 0.02	39.0 ± 6.0			59BLOCK+
1.265					0.21	GFS= 56.0	59LEONARD+
1.275						WGO= 0.344± 0.018	61SLAUGHTER+
1.27		50.0 ± 5.0			0.35 ± 0.06		65BOWMAN+
1.27			A 0.39 ± 0.02				66GERASIMOV
1.276			A 0.322± 0.006 ± 0.026	46.5 ± 0.8	0.37		75DERRIEN+
1.268± 0.0043		41.0 ± 2.0	A 0.33 ± 0.016				76KALEBIN+
1.279			A 0.314± 0.003	49.2 ± 0.3	(0.3)		76WESTON+
1.28					0.4		77GAYTHER+
1.28					0.37 ± 0.02		78KNITTER+
1.68							66GERASIMOV
1.928	2.5	44.493	0.113	44.3	0.08	L = 0	JENDL-2
1.928	3.0		A 0.114	44.6	0.08		79UKNDL
1.935	2.5	44.984	0.114	44.8	0.07	L = 0	ENDF-B-5
1.928	2.5	44.493	0.113	44.3	0.08	L = 0	JENDL-1
1.93			A 0.125± 0.006				59BLOCK+
1.9					(0.7)		59LEONARD+
1.93						WGO= 0.09 ± 0.004	61SLAUGHTER+
1.68						GFS= 50.0	65BOWMAN+
1.93			A 0.126± 0.006				66GERASIMOV
1.928			A 0.113± 0.001 ± 0.006	44.3 ± 0.3	0.08		75DERRIEN+
1.916± 0.005		46.0 ± 2.0	A 0.107± 0.002				76KALEBIN+
1.935			A 0.114± 0.001	44.8 ± 0.7	(0.07)		76WESTON+
1.93					0.06		77GAYTHER+
2.372	2.5	42.653	0.073	42.4	0.18	L = 0	JENDL-2
2.372	2.0		A 0.073	44.0	0.18		79UKNDL
2.383	2.5	45.622	0.072	45.4	0.15	L = 0	ENDF-B-5
2.372	2.5	42.653	0.073	42.4	0.18	L = 0	JENDL-1
2.375			A 0.08 ± 0.01				59BLOCK+
2.4					(0.7)	COM= DOUBLET H	59LEONARD+
2.375						WGO= 0.052± 0.008	61SLAUGHTER+
2.36			A 0.08 ± 0.012				66GERASIMOV
2.372			A 0.073± 0.001 ± 0.004	42.4 ± 0.3	0.18		75DERRIEN+

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
2.358± 0.008		41.0 ± 2.0	a 0.07 ± 0.001				76KALEBIN+
2.383			a 0.072± 0.001	45.4 ± 1.2	(0.15)		76WESTON+
2.37					0.16		77GAYTHER+
2.37					0.19 ± 0.03		78KNITTER+
2.598	2.5	46.317	0.147	46.0	0.17	L = 0	JENDL-2
2.598	3.0		c 0.150	47.6	0.17		79UKNDL
2.61	2.5	49.353	0.153	49.1	0.1	L = 0	ENDF-B-5
2.598	2.5	46.317	0.147	46.0	0.17	L = 0	JENDL-1
2.6			a 0.2 ± 0.02				59BLOCK+
2.5						WGO= 0.124± 0.012	61SLAUGHTER+
2.6			a 0.2 ± 0.02				66GERASIMOV
2.598			a 0.147± 0.001 ± 0.01	46.0 ± 0.3	0.17		75OERRIEN+
2.581± 0.009		38.0 ± 2.0	a 0.15 ± 0.004				76KALEBIN+
2.61			a 0.153± 0.002	49.1 ± 0.8	(0.1)		76WESTON+
2.6					0.14		77GAYTHER+
2.6					0.15 ± 0.03		78KNITTER+
3.4					(8.0)		59LEONARD+
3.973	2.5	44.87	0.21	44.5	0.16	L = 0	JENDL-2
3.973	3.0		a 0.200	44.5	0.16		79UKNDL
3.98	2.5	44.7	0.189	44.5	0.011	L = 0	ENDF-B-5
3.973	2.5	44.87	0.21	44.5	0.16	L = 0	JENDL-1
3.99			a 0.25 ± 0.02				59BLOCK+
4.0					(4.0)		59LEONARD+
3.99						WGO= 0.13 ± 0.012	61SLAUGHTER+
4.0			a 0.25 ± 0.026				66GERASIMOV
3.973			a 0.21 ± 0.001 ± 0.006	44.5 ± 0.3	0.15		75OERRIEN+
3.356± 0.017		28.0 ± 3.0	a 0.23 ± 0.008				76KALEBIN+
3.98			a 0.189± 0.002		(0.011		76WESTON+
3.97					0.13		77GAYTHER+
3.97					0.13 ± 0.03		78KNITTER+
4.4			a 0.027± 0.006				59BLOCK+
4.4						WGO= 0.012± 0.004	61SLAUGHTER+
4.4			a 0.026± 0.008				66GERASIMOV
4.968	2.5	44.415	0.175	43.8	0.44	L = 0	JENDL-2
4.968	3.0		a 0.178	43.8	0.44		79UKNDL
4.983	2.5	44.011	0.181	43.8	0.03	L = 0	ENDF-B-5
4.968	2.5	44.415	0.175	43.8	0.44	L = 0	JENDL-1
5.0			a 0.21 ± 0.02				59BLOCK+
5.0						WGO= 0.095± 0.01	61SLAUGHTER+
5.05			a 0.342± 0.034				66GERASIMOV
4.968			a 0.175± 0.001 ± 0.004	43.8 ± 0.4	0.44		75OERRIEN+
4.947± 0.024		31.0 ± 5.0	a 0.176± 0.005				76KALEBIN+
4.383			a 0.181± 0.004		(0.03)		76WESTON+
4.37					0.38		77GAYTHER+
4.37					0.35 ± 0.05		78KNITTER+
5.415	2.5	45.59	0.76	44.2	0.63	L = 0	JENDL-2
5.415	3.0		a 0.754	44.2	0.63		79UKNDL
5.423	2.5	45.327	0.747	44.2	0.38	L = 0	ENDF-B-5
5.415	2.5	45.59	0.76	44.2	0.63	L = 0	JENDL-1
5.44			a 1.3 ± 0.2				59BLOCK+
5.44						WGO= 0.448± 0.012	61SLAUGHTER+
5.48			a 1.048± 0.028				66GERASIMOV
5.415			a 0.76 ± 0.003 ± 0.019	44.2 ± 0.1	0.53		75OERRIEN+
5.39 ± 0.03		38.0 ± 7.0	a 0.844± 0.114				76KALEBIN+
5.423			a 0.747± 0.007		(0.38)		76WESTON+
5.42					0.55		77GAYTHER+
5.42					0.64 ± 0.03		78KNITTER+
5.8	2.5	44.001	0.002	43.77	0.229	L = 0	JENDL-2
5.800	2.0		a 0.002	44.2	0.23		79UKNDL
5.8	2.5	44.001	0.002	43.77	0.229	L = 0	JENDL-1
5.8			a 0.002				75OERRIEN+
6.117	2.5	44.344	0.124	43.8	0.42	L = 0	JENDL-2
6.117	3.0		a 0.128	43.8	0.42		79UKNDL
6.128	2.5	43.961	0.131	43.8	0.03	L = 0	ENDF-B-5
6.117	2.5	44.344	0.124	43.8	0.42	L = 0	JENDL-1
6.14			a 0.23 ± 0.03				59BLOCK+
6.06						WGO= 0.052± 0.016	61SLAUGHTER+
6.2			a 0.130± 0.04				66GERASIMOV
6.117			a 0.124± 0.001 ± 0.002	43.8 ± 0.7	0.42		75OERRIEN+
6.1 ± 0.04		42.0 ±14.0	a 0.116± 0.005				76KALEBIN+
6.128			a 0.131± 0.002		(0.03)		76WESTON+
6.12					0.34		77GAYTHER+
6.12					0.34 ± 0.11		78KNITTER+
6.745	2.5	44.018	0.028	43.77	0.22	L = 0	JENDL-2

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
6.745	3.0		a 0.030	44.2	0.22		79UKNDL
6.755	2.5	44.052	0.032	43.8	0.22	L = 0	ENDF-B-5
6.745	2.5	44.018	0.028	43.77	0.22	L = 0	JENDL-1
6.78			a 0.059± 0.015				59BLOCK+
6.78						WGO= 0.09 ± 0.036	61SLAUGHTER+
6.745			a 0.028± 0.001		0.22		75DERRIEN+
6.65 ± 0.04			a 0.05 ± 0.03				76KALEBIN+
6.755			a 0.032± 0.002				76WESTON+
6.74					0.08		77GAYTHER+
7.659	2.5	43.903	0.037	43.77	0.1	L = 0	JENDL-2
7.659	3.0		a 0.042	44.2	0.10		79UKNDL
7.679	2.5	43.946	0.046	43.8	0.1	L = 0	ENDF-B-5
7.659	2.5	43.903	0.037	43.77	0.1	L = 0	JENDL-1
7.64						WGO= 0.044± 0.03	61SLAUGHTER+
7.659			a 0.037± 0.001		0.1		75DERRIEN+
7.53 ± 0.05			a 0.07 ± 0.04				76KALEBIN+
7.679			a 0.046± 0.003				76WESTON+
7.97						WGO= 0.28 ± 0.12	61SLAUGHTER+
8.173	2.5	42.928	0.108	42.7	0.12	L = 0	JENDL-2
8.173	2.0		a 0.113	42.7	0.12		79UKNDL
8.196	2.5	42.937	0.117	42.7	0.12	L = 0	ENDF-B-5
8.173	2.5	42.928	0.108	42.7	0.12	L = 0	JENDL-1
8.1			a 5.0 ± 2.0				59BLOCK+
8.11						WGO= 0.28 ± 0.12	61SLAUGHTER+
8.173			a 0.108± 0.001 ± 0.001	42.7 ± 1.2	0.12		75DERRIEN+
8.17 ± 0.02		42.0 ± 5.0	a 0.096± 0.004				76KALEBIN+
8.196			a 0.117± 0.003				76WESTON+
8.17					0.19		77GAYTHER+
8.28						WGO= 0.044± 0.026	61SLAUGHTER+
9.113	2.5	44.769	0.389	44.2	0.18	L = 0	JENDL-2
9.113	2.0		a 0.387	44.2	0.18		79UKNDL
9.137	2.5	44.635	0.385	44.2	0.05	L = 0	ENDF-B-5
9.113	2.5	44.769	0.389	44.2	0.18	L = 0	JENDL-1
9.14			a 0.8 ± 0.12				59BLOCK+
9.09						WGO= 0.132± 0.016	61SLAUGHTER+
9.3			a 0.402± 0.050				66GERASIMOV
9.113			a 0.389± 0.002 ± 0.009	44.2 ± 0.6	0.18		75DERRIEN+
9.11 ± 0.02		48.0 ± 3.0	a 0.358± 0.006				76KALEBIN+
9.137			a 0.385± 0.004		(0.05)		76WESTON+
9.11					0.17		77GAYTHER+
9.12					0.17 ± 0.03		78KNITTER+
9.851	2.5	45.256	0.406	43.9	0.95	L = 0	JENDL-2
9.851	3.0		a 0.412	43.9	0.95		79UKNDL
9.878	2.5	45.317	0.417	43.9	1.0	L = 0	ENDF-B-5
9.851	2.5	45.256	0.406	43.9	0.95	L = 0	JENDL-1
9.9			a 0.71 ± 0.11				59BLOCK+
9.84						WGO= 0.106± 0.016	61SLAUGHTER+
10.05			a 0.336± 0.050				66GERASIMOV
9.851			a 0.406± 0.002 ± 0.009	43.9 ± 0.6	0.95		75DERRIEN+
9.84 ± 0.03		48.0 ± 3.0	a 0.37 ± 0.007				76KALEBIN+
9.878			a 0.417± 0.005		(1.0)		76WESTON+
9.85					0.85		77GAYTHER+
9.85					0.75 ± 0.08		78KNITTER+
10.116	2.5	43.956	0.026	43.77	0.16	L = 0	JENDL-2
10.116	2.0		a 0.026	44.2	0.16		79UKNDL
10.116	2.5	43.956	0.026	43.77	0.16	L = 0	JENDL-1
10.116			a 0.026± 0.001		0.16		75DERRIEN+
10.11 ± 0.03			a 0.025± 0.004				76KALEBIN+
10.403	2.5	42.786	0.326	42.4	0.06	L = 0	JENDL-2
10.403	3.0		a 0.334	42.4	0.06		79UKNDL
10.43	2.5	42.803	0.343	42.4	0.06	L = 0	ENDF-B-5
10.403	2.5	42.786	0.326	42.4	0.06	L = 0	JENDL-1
10.4			a 0.7 ± 0.2				59BLOCK+
10.38						WGO= 0.106± 0.01	61SLAUGHTER+
10.403			a 0.326± 0.002 ± 0.005	42.4 ± 0.8	0.06		75DERRIEN+
10.39 ± 0.03		45.0 ± 4.0	a 0.294± 0.007				76KALEBIN+
10.43			a 0.343± 0.005				76WESTON+
10.997	2.5	47.043	0.413	46.5	0.13	L = 0	JENDL-2
10.997	2.0		a 0.414	46.5	0.13		79UKNDL
11.03	2.5	47.045	0.415	46.5	0.13	L = 0	ENDF-B-5
10.997	2.5	47.043	0.413	46.5	0.13	L = 0	JENDL-1
10.98						WGO= 0.108± 0.014	61SLAUGHTER+
10.997			a 0.413± 0.002 ± 0.006	46.5 ± 0.8	0.13		75DERRIEN+

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
10.99 ± 0.04		52.0 ± 4.0	a 0.382± 0.008				76KALEBIN+
11.03			a 0.415± 0.008				76WESTON+
11.583	2.5	44.015	0.016	43.77	0.229	L = 0	JENDL-2
11.583	3.0		a 0.023	44.2	0.23		79UKNDL
11.56	2.5	44.057	0.03	43.8	0.227	L = 0	ENDF-B-5
11.583	2.5	44.015	0.016	43.77	0.229	L = 0	JENDL-1
11.05			a 0.65 ± 0.06				S9BLOCK+
11.583			a 0.016± 0.001				75DERRIEN+
11.58 ± 0.05			a 0.018± 0.003				76KALEBIN+
11.66			a 0.03 ± 0.004				76WESTON+
12.137	2.5	44.006	0.007	43.77	0.229	L = 0	JENDL-2
12.137	2.0		a 0.011	44.2	0.23		79UKNDL
12.25	2.5	44.041	0.014	43.8	0.227	L = 0	ENDF-B-5
12.137	2.5	44.006	0.007	43.77	0.229	L = 0	JENDL-1
12.137			a 0.007± 0.001				75DERRIEN+
12.06 ± 0.06			a 0.007± 0.003				76KALEBIN+
12.25			a 0.014± 0.004				76WESTON+
12.879	2.5	43.961	0.131	43.77	0.06	L = 0	JENDL-2
12.879	3.0		a 0.141	44.2	0.06		79UKNDL
12.92	2.5	44.011	0.151	43.8	0.06	L = 0	ENDF-B-5
12.879	2.5	43.961	0.131	43.77	0.06	L = 0	JENDL-1
12.9			a 0.24 ± 0.05				S9BLOCK+
12.86						WGO= 0.04 ± 0.012	61SLAUGHTER+
12.879			a 0.131± 0.001 ± 0.001		0.06		75DERRIEN+
12.86 ± 0.06		44.0 ± 5.0	a 0.116± 0.009				76KALEBIN+
12.92			a 0.151± 0.006				76WESTON+
13.874	2.5	44.011	0.012	43.77	0.229	L = 0	JENDL-2
13.874	2.0		a 0.012	44.2	0.23		79UKNDL
13.874	2.5	44.011	0.012	43.77	0.229	L = 0	JENDL-1
13.874			a 0.012± 0.001				75DERRIEN+
13.8 ± 0.06		44.0 ± 5.0	a 0.05 ± 0.015				76KALEBIN+
14.36	2.5	44.07	0.071	43.77	0.229	L = 0	JENDL-2
14.360	3.0		a 0.072	44.2	0.23		79UKNDL
14.35	2.5	44.099	0.072	43.8	0.227	L = 0	ENDF-B-5
14.36	2.5	44.07	0.071	43.77	0.229	L = 0	JENDL-1
14.36			a 0.071± 0.002 ± 0.001				75DERRIEN+
14.32 ± 0.06			a 0.066± 0.012				76KALEBIN+
14.35			a 0.072± 0.01				76WESTON+
14.682	2.5	43.052	2.482	40.3	0.27	L = 0	JENDL-2
14.682	2.3		a 2.397	40.3	0.27		79UKNDL
14.69	2.5	42.882	2.312	40.3	0.27	L = 0	ENDF-B-5
14.682	2.5	43.052	2.482	40.3	0.27	L = 0	JENDL-1
14.8			a 3.5 ± 0.4				S9BLOCK+
14.7						WGO= 0.62 ± 0.12	61SLAUGHTER+
15.04			a 2.4 ± 0.05				66GERASIMOV
14.682			a 2.482± 0.011 ± 0.075	40.3 ± 0.5	0.27		75DERRIEN+
14.66 ± 0.07		44.0 ± 5.0	a 2.3 ± 0.13				76KALEBIN+
14.69			a 2.312± 0.046		(0.271		76WESTON+
14.68					0.29 ± 0.04		78KNITTER+
15.689	2.5	39.644	0.244	39.3	0.1	L = 0	JENDL-2
15.689	2.0		a 0.251	39.3	0.10		79UKNDL
15.7	2.5	39.657	0.257	39.3	0.1	L = 0	ENDF-B-5
15.689	2.5	39.644	0.244	39.3	0.1	L = 0	JENDL-1
15.8			a 0.4 ± 0.12				S9BLOCK+
15.6						WGO= 0.044± 0.026	61SLAUGHTER+
15.689			a 0.244± 0.003 ± 0.003	39.3 ± 2.9	0.1		75DERRIEN+
15.66 ± 0.07		32.0 ±12.0	a 0.215± 0.012				76KALEBIN+
15.7			a 0.257± 0.013				76WESTON+
15.73						WGO= 0.04 ± 0.024	61SLAUGHTER+
16.02						WGO= 0.036± 0.022	61SLAUGHTER+
16.388	2.5	43.187	1.277	41.8	0.11	L = 0	JENDL-2
16.388	2.0		a 1.244	41.8	0.11		79UKNDL
16.39	2.5	43.12	1.21	41.8	0.11	L = 0	ENDF-B-5
16.388	2.5	43.187	1.277	41.8	0.11	L = 0	JENDL-1
16.5			a 1.8 ± 0.3				S9BLOCK+
16.38						WGO= 0.24 ± 0.048	61SLAUGHTER+
16.388			a 1.277± 0.005 ± 0.034	41.8 ± 0.9	0.11		75DERRIEN+
16.35 ± 0.07		44.0 ± 5.0	a 1.185± 0.033				76KALEBIN+
16.39			a 1.21 ± 0.021				76WESTON+
16.849	2.5	42.166	0.646	41.2	0.32	L = 0	JENDL-2
16.849	3.0		a 0.645	41.2	0.32		79UKNDL

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
16.85	2.5	42.164	0.644	41.2	0.32	L = 0	ENDF-B-5
16.849	2.5	42.166	0.646	41.2	0.32	L = 0	JENDL-1
17.0			A 0.7 ± 0.2				59BLOCK+
16.82						WGO= 0.1 ± 0.04	61SLAUGHTER+
16.849			A 0.646± 0.004 ± 0.012	41.2 ± 1.5	0.32		75DERRIEN+
16.81 ± 0.07		31.0 ± 8.0	A 0.575± 0.02				76KALEBIN+
16.85			A 0.644± 0.018				76WESTON+
17.729	2.5	37.991	0.391	37.3	0.3	L = 0	JENDL-2
17.729	2.0		A 0.411	37.3	0.30		79UKNDL
17.76	2.5	38.03	0.43	37.3	0.3	L = 0	ENDF-B-5
17.729	2.5	37.991	0.391	37.3	0.3	L = 0	JENDL-1
17.68						WGO= 0.06 ± 0.024	61SLAUGHTER+
17.729			A 0.391± 0.004 ± 0.006	37.3 ± 2.4	0.3		75DERRIEN+
17.69 ± 0.07		40.0 ±10.0	A 0.373± 0.016				76KALEBIN+
17.76			A 0.43 ± 0.017				76WESTON+
18.167	2.5	44.016	0.017	43.77	0.229	L = 0	JENDL-2
18.167	3.0		A 0.017	44.2	0.23		79UKNDL
18.167	2.5	44.016	0.017	43.77	0.229	L = 0	JENDL-1
18.37						WGO= 0.1 ± 0.04	61SLAUGHTER+
18.167			A 0.017				75DERRIEN+
18.09							76KALEBIN+
19.445	2.5	44.013	0.213	43.77	0.03	L = 0	JENDL-2
19.445	2.0		A 0.220	44.2	0.03		79UKNDL
19.47	2.5	44.056	0.226	43.8	0.03	L = 0	ENDF-B-5
19.445	2.5	44.013	0.213	43.77	0.03	L = 0	JENDL-1
19.48						WGO= 0.028± 0.028	61SLAUGHTER+
19.445			A 0.213± 0.003 ± 0.002		0.03		75DERRIEN+
19.39 ± 0.07		37.0 ±12.0	A 0.182± 0.016				76KALEBIN+
19.47			A 0.226± 0.016				76WESTON+
20.333	2.5	44.033	0.034	43.77	0.229	L = 0	JENDL-2
20.333	3.0		A 0.041	44.2	0.23		79UKNDL
20.38	2.5	44.076	0.049	43.8	0.227	L = 0	ENDF-B-5
20.333	2.5	44.033	0.034	43.77	0.229	L = 0	JENDL-1
20.333			A 0.034				75DERRIEN+
20.28 ± 0.07		37.0 ±12.0	A 0.05 ± 0.01				76KALEBIN+
20.38			A 0.049± 0.013				76WESTON+
20.64						WGO= 0.06 ± 0.04	61SLAUGHTER+
20.88	2.5	44.088	0.089	43.77	0.229	L = 0	JENDL-2
20.880	3.0		A 0.087	44.2	0.23		79UKNDL
20.91	2.5	44.112	0.085	43.8	0.227	L = 0	ENDF-B-5
20.88	2.5	44.088	0.089	43.77	0.229	L = 0	JENDL-1
20.88			A 0.089± 0.001				75DERRIEN+
20.84 ± 0.08		37.0 ±12.0	A 0.064± 0.011				76KALEBIN+
20.91			A 0.085± 0.016				76WESTON+
21.74	2.5	44.121	0.081	43.77	0.27	L = 0	JENDL-2
21.740	2.0		A 0.079	44.2	0.27		79UKNDL
21.78	2.5	44.146	0.076	43.8	0.27	L = 0	ENDF-B-5
21.74	2.5	44.121	0.081	43.77	0.27	L = 0	JENDL-1
21.74			A 0.081± 0.003		0.27		75DERRIEN+
21.72 ± 0.08		37.0 ±12.0	A 0.067± 0.012				76KALEBIN+
21.78			A 0.076± 0.016				76WESTON+
22.21	3.0		A 0.028	44.2	0.23		79UKNDL
22.21	2.5	44.055	0.028	43.8	0.227	L = 0	ENDF-B-5
22.21			A 0.028± 0.016				76WESTON+
22.748	2.5	44.068	6.899-2	43.77	0.229	L = 0	JENDL-2
22.748	3.0		A 0.067	44.2	0.23		79UKNDL
22.8	2.5	44.091	6.399-2	43.8	0.227	L = 0	ENDF-B-5
22.748	2.5	44.068	6.899-2	43.77	0.229	L = 0	JENDL-1
22.748			A 0.069± 0.003				75DERRIEN+
22.74 ± 0.09		37.0 ±12.0	A 0.07 ± 0.012				76KALEBIN+
22.8			A 0.064± 0.016				76WESTON+
23.079	2.5	42.887	0.417	42.2	0.27	L = 0	JENDL-2
23.079	2.0		A 0.387	42.2	0.27		79UKNDL
23.09	2.5	42.827	0.357	42.2	0.27	L = 0	ENDF-B-5
23.079	2.5	42.887	0.417	42.2	0.27	L = 0	JENDL-1
23.09						WGO= 0.08 ± 0.04	61SLAUGHTER+
23.079			A 0.417± 0.012 ± 0.005	42.2 ± 6.0	0.27		75DERRIEN+
23.08 ± 0.09		37.0 ±12.0	A 0.39 ± 0.05				76KALEBIN+
23.09			A 0.357± 0.021				76WESTON+
23.337	2.5	43.115	0.445	42.5	0.17	L = 0	JENDL-2
23.337	3.0		A 0.472	42.5	0.17		79UKNDL
23.36	2.5	43.168	0.498	42.5	0.17	L = 0	ENDF-B-5

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
23.337	2.5	43.115	0.445	42.5	0.17	L = 0	JENDL-1
23.28						WGO= 0.16 ± 0.048	61SLAUGHTER+
23.337			A 0.445± 0.012 ± 0.006	42.5 ± 5.8	0.17		75DERRIEN+
23.33 ± 0.09		37.0 ±12.0	A 0.4 ± 0.05				76KALEBIN+
23.36			A 0.498± 0.024				76WESTON+
24.192	2.5	40.644	1.304	39.2	0.14	L = 0	JENDL-2
24.192	3.0		A 1.302	39.2	0.14		79UKNDL
24.23	2.5	40.639	1.299	39.2	0.14	L = 0	ENDF-B-5
24.192	2.5	40.644	1.304	39.2	0.14	L = 0	JENDL-1
24.17						WGO= 0.22 ± 0.04	61SLAUGHTER+
24.192			A 1.304± 0.007 ± 0.028	39.2 ± 1.5	0.14		75DERRIEN+
24.17 ± 0.09		37.0 ±12.0	A 1.27 ± 0.08				76KALEBIN+
24.23			A 1.299± 0.03				76WESTON+
25.008	2.5	44.013	0.014	43.77	0.229	L = 0	JENDL-2
25.008	3.0		A 0.014	44.2	0.23		79UKNDL
25.008	2.5	44.013	0.014	43.77	0.229	L = 0	JENDL-1
25.008			A 0.014± 0.001 ± 0.001				75DERRIEN+
25.05 ± 0.1							76KALEBIN+
25.634	2.5	39.148	1.258	37.5	0.29	L = 0	JENDL-2
25.634	3.0		A 1.263	37.5	0.29		79UKNDL
25.68	2.5	39.158	1.258	37.6	0.29	L = 0	ENDF-B-5
25.634	2.5	39.148	1.258	37.5	0.29	L = 0	JENDL-1
25.61						WGO= 0.2 ± 0.08	61SLAUGHTER+
25.634			A 1.258± 0.008 ± 0.025	37.6 ± 1.7	0.29		75DERRIEN+
25.6 ± 0.1		37.0 ±12.0	A 1.21				76KALEBIN+
25.68			A 1.268± 0.032				75WESTON+
26.498	2.5	22.537	0.487	22.0	0.05	L = 0	JENDL-2
26.498	3.0		A 0.457	44.2	0.05		79UKNDL
26.498	2.5	22.537	0.487	22.0	0.05	L = 0	JENDL-1
26.5						WGO= 0.12 ± 0.04	61SLAUGHTER+
26.498			A 0.487± 0.014 ± 0.006	22.0 ± 6.1	0.05		75DERRIEN+
26.5 ± 0.1							76KALEBIN+
26.59	2.5	44.645	0.618	43.8	0.227	L = 0	ENDF-B-5
26.59			A 0.618± 0.052				76WESTON+
26.669	2.5	44.177	0.217	43.77	0.19	L = 0	JENDL-2
26.669	3.0		A 0.204	44.2	0.19		79UKNDL
26.669	2.5	44.177	0.217	43.77	0.19	L = 0	JENDL-1
26.669			A 0.217± 0.01 ± 0.004		0.19		75DERRIEN+
26.67 ± 0.1							76KALEBIN+
27.575	2.5	44.164	0.165	43.77	0.229	L = 0	JENDL-2
27.575	3.0		A 0.165	44.2	0.51		79UKNDL
27.575	2.5	44.164	0.165	43.77	0.229	L = 0	JENDL-1
27.575			A 0.165± 0.021 ± 0.002				75DERRIEN+
27.52 ± 0.1							76KALEBIN+
27.726	2.5	71.338	0.509	70.6	0.229	L = 0	JENDL-2
27.726	3.0		A 0.572	44.2	0.19		79UKNDL
27.71	2.5	71.461	0.634	70.6	0.227	L = 0	ENDF-B-5
27.726	2.5	71.338	0.509	70.6	0.229	L = 0	JENDL-1
27.68						WGO= 0.12 ± 0.04	61SLAUGHTER+
27.726			A 0.509± 0.029 ± 0.006	70.6 ± 8.8			75DERRIEN+
27.65 ± 0.1							76KALEBIN+
27.71			A 0.634± 0.023				76WESTON+
28.355	2.5	45.43	0.57	44.7	0.16	L = 0	JENDL-2
28.355	2.0		A 0.569	44.7	0.16		79UKNDL
28.35	2.5	45.416	0.556	44.7	0.16	L = 0	ENDF-B-5
28.355	2.5	45.43	0.57	44.7	0.16	L = 0	JENDL-1
28.36						WGO= 0.09 ± 0.028	61SLAUGHTER+
28.355			A 0.57 ± 0.009 ± 0.008	44.7 ± 3.7	0.16		75DERRIEN+
28.31 ± 0.11			A 0.4				76KALEBIN+
28.35			A 0.556± 0.019				76WESTON+
28.903	2.5	49.227	0.467	48.6	0.16	L = 0	JENDL-2
28.903	3.0		A 0.482	48.6	0.16		79UKNDL
28.9	2.5	49.258	0.498	48.6	0.16	L = 0	ENDF-B-5
28.903	2.5	49.227	0.467	48.6	0.16	L = 0	JENDL-1
28.93						WGO= 0.1 ± 0.03	61SLAUGHTER+
28.903			A 0.467± 0.009 ± 0.006	48.6 ± 4.7	0.16		75DERRIEN+
28.82 ± 0.12			A 0.35				76KALEBIN+

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
28.9			[A] 0.498± 0.02				76WESTON+
29.504	2.5	45.401	0.701	44.6	0.1	L = 0	JENDL-2
29.504	2.0		[A] 0.692	44.6	0.10		79UKNDL
29.51	2.5	45.382	0.682	44.6	0.1	L = 0	ENDF-B-5
29.504	2.5	45.401	0.701	44.6	0.1	L = 0	JENDL-1
29.56						WGO= 0.15 ± 0.05	61SLAUGHTER+
29.504			[A] 0.701± 0.009 ± 0.009	44.6 ± 3.2	0.1		75DERRIEN+
29.43 ± 0.12			[A] 0.61				76KALEBIN+
29.51			[A] 0.682± 0.021				76WESTON+
29.956	2.5	44.049	0.05	43.77	0.229	L = 0	JENDL-2
29.956	3.0		[A] 0.066	44.2	0.23		79UKNDL
29.95	2.5	44.108	0.081	43.8	0.227	L = 0	ENDF-B-5
29.956	2.5	44.049	0.05	43.77	0.229	L = 0	JENDL-1
29.956			[A] 0.05				75DERRIEN+
29.95			[A] 0.081± 0.017				76WESTON+
30.822	2.5	44.149	0.15	43.77	0.229	L = 0	JENDL-2
30.822	3.0		[A] 0.233	44.2	0.27		79UKNDL
30.87	2.5	44.343	0.316	43.8	0.227	L = 0	ENDF-B-5
30.822	2.5	44.149	0.15	43.77	0.229	L = 0	JENDL-1
30.79						WGO= 0.08 ± 0.06	61SLAUGHTER+
30.822			[A] 0.15 ± 0.01 ± 0.002				75DERRIEN+
30.87			[A] 0.316± 0.023				76WESTON+
31.02	2.5	44.335	0.336	43.77	0.229	L = 0	JENDL-2
31.020	2.0		[A] 0.342	44.2	0.37		79UKNDL
31.02	2.5	44.335	0.336	43.77	0.229	L = 0	JENDL-1
31.02			[A] 0.336± 0.01 ± 0.004				75DERRIEN+
31.251	2.5	43.816	0.996	42.6	0.22	L = 0	JENDL-2
31.251	3.0		[A] 1.012	42.6	0.22		79UKNDL
31.23	2.5	44.197	1.377	42.6	0.22	L = 0	ENDF-B-5
31.251	2.5	43.816	0.996	42.6	0.22	L = 0	JENDL-1
31.2:						WGO= 0.22 ± 0.06	61SLAUGHTER+
31.251			[A] 0.996± 0.019 ± 0.015	42.6 ± 4.2	0.22		75DERRIEN+
31.23			[A] 1.377± 0.031				76WESTON+
32.03	2.5	47.98	0.3	47.4	0.28	L = 0	JENDL-2
32.030	3.0		[A] 0.299	47.8	0.28		79UKNDL
32.05	2.5	48.378	0.298	47.8	0.28	L = 0	ENDF-B-5
32.03	2.5	47.98	0.3	47.4	0.28	L = 0	JENDL-1
32.:4						WGO= 0.1 ± 0.08	61SLAUGHTER+
32.03			[A] 0.3 ± 0.01 ± 0.003	47.4 ± 8.6	0.28		75DERRIEN+
32.05			[A] 0.298± 0.02				76WESTON+
33.51	2.5	44.059	0.06	43.77	0.229	L = 0	JENDL-2
33.510	3.0		[A] 0.060	44.2	0.23		79UKNDL
33.51	2.5	44.059	0.06	43.77	0.229	L = 0	JENDL-1
33.51			[A] 0.06				75DERRIEN+
34.028	2.5	46.257	0.628	45.4	0.229	L = 0	JENDL-2
34.028	2.0		[A] 0.639	45.4	0.01		79UKNDL
34.03	2.5	46.276	0.649	45.4	0.227	L = 0	ENDF-B-5
34.028	2.5	46.257	0.628	45.4	0.229	L = 0	JENDL-1
34.02						WGO= 0.14 ± 0.08	61SLAUGHTER+
34.028			[A] 0.628± 0.012 ± 0.008	45.4 ± 4.9			75DERRIEN+
34.03			[A] 0.649± 0.025				76WESTON+
34.46	2.5	44.124	0.125	43.77	0.229	L = 0	JENDL-2
34.460	3.0		[A] 0.126	44.2	0.85		79UKNDL
34.44	2.5	44.153	0.126	43.8	0.227	L = 0	ENDF-B-5
34.46	2.5	44.124	0.125	43.77	0.229	L = 0	JENDL-1
34.46			[A] 0.125± 0.007				75DERRIEN+
34.44			[A] 0.126± 0.021				76WESTON+
34.928	2.5	43.841	0.612	42.8	0.229	L = 0	JENDL-2
34.929	2.0		[A] 0.611	42.8	0.16		79UKNDL
34.93	2.5	43.637	0.61	42.8	0.227	L = 0	ENDF-B-5
34.928	2.5	43.641	0.612	42.8	0.229	L = 0	JENDL-1
35.02						WGO= 0.12 ± 0.08	61SLAUGHTER+
34.928			[A] 0.612± 0.012 ± 0.006	42.8 ± 5.4			75DERRIEN+
34.93			[A] 0.61 ± 0.025				76WESTON+
35.485	2.5	51.256	0.427	50.6	0.229	L = 0	JENDL 2
35.485	3.0		[A] 0.434	44.2	0.18		79UKNDL
35.53	2.5	51.271	0.444	50.6	0.227	L = 0	ENDF-B-5
35.485	2.5	51.256	0.427	50.6	0.229	L = 0	JENDL-1
35.53						WGO= 0.09 ± 0.046	61SLAUGHTER+

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
35.485			[a] 0.427± 0.012 ± 0.004	50.6 ± 8.1			75DERRIEN+
35.53			[a] 0.444± 0.025				76WESTON+
36.25	2.5	44.166	0.167	43.77	0.229	L = 0	JENDL-2
36.250	3.0		[a] 0.159	44.2	0.10		79UKNDL
36.25	2.5	44.166	0.167	43.77	0.229	L = 0	JENDL-1
36.25			[a] 0.167± 0.007 ± 0.001				75DERRIEN+
36.36	2.5	44.27	0.243	43.8	0.227	L = 0	ENDF-B-5
36.36			[a] 0.243± 0.023				76WESTON+
36.483	2.5	44.099	0.1	43.77	0.229	L = 0	JENDL-2
36.483	2.0		[a] 0.095	44.2	0.23		79UKNDL
36.483	2.5	44.099	0.1	43.77	0.229	L = 0	JENDL-1
36.483			[a] 0.1				75DERRIEN+
36.979	2.5	55.505	2.995	52.0	0.51	L = 0	JENDL-2
36.979	3.0		[a] 3.124	44.2	0.51		79UKNDL
36.99	2.5	55.763	3.253	52.0	0.51	L = 0	ENDF-B-5
36.979	2.5	55.505	2.995	52.0	0.51	L = 0	JENDL-1
37.01						WGO= 0.86 ± 0.28	61SLAUGHTER+
36.979			[a] 2.995± 0.017 ± 0.075	52.0 ± 1.5	0.51		75DERRIEN+
36.99			[a] 3.253± 0.046				76WESTON+
38.366	2.5	49.56	2.26	47.0	0.3	L = 0	JENDL-2
38.366	2.0		[a] 2.315	44.2	0.30		79UKNDL
38.39	2.5	49.67	2.37	47.0	0.3	L = 0	ENDF-B-5
38.366	2.5	49.56	2.26	47.0	0.3	L = 0	JENDL-1
38.39						WGO= 0.46 ± 0.15	61SLAUGHTER+
38.366			[a] 2.26 ± 0.015 ± 0.044	47.0 ± 2.0	0.3		75DERRIEN+
38.39			[a] 2.37 ± 0.041				76WESTON+
38.83	2.5	44.054	0.055	43.77	0.229	L = 0	JENDL-2
38.830	3.0		[a] 0.055	44.2	0.23		79UKNDL
38.83	2.5	44.054	0.055	43.77	0.229	L = 0	JENDL-1
38.83			[a] 0.055				75DERRIEN+
39.617	2.5	41.725	1.295	40.2	0.23	L = 0	JENDL-2
39.617	3.0		[a] 1.321	40.2	0.23		79UKNDL
39.65	2.5	41.776	1.346	40.2	0.23	L = 0	ENDF-B-5
39.617	2.5	41.725	1.295	40.2	0.23	L = 0	JENDL-1
39.71						WGO= 0.34 ± 0.1	61SLAUGHTER+
39.617			[a] 1.295± 0.02 ± 0.02	40.2 ± 4.2	0.23		75DERRIEN+
39.65			[a] 1.346± 0.114				76WESTON+
40.067	2.5	78.67	0.541	77.9	0.229	L = 0	JENDL-2
40.067	2.0		[a] 0.435	44.2	0.23		79UKNDL
40.05	2.5	78.456	0.329	77.9	0.227	L = 0	ENDF-B-5
40.067	2.5	78.67	0.541	77.9	0.229	L = 0	JENDL-1
40.067			[a] 0.541± 0.04 ± 0.005	77.9 ±20.1			75DERRIEN+
40.05			[a] 0.329± 0.102				76WESTON+
40.396	2.5	67.177	0.948	66.0	0.229	L = 0	JENDL-2
40.396	3.0		[a] 1.099	44.2	0.23		79UKNDL
40.37	2.5	67.477	1.25	66.0	0.227	L = 0	ENDF-B-5
40.396	2.5	67.177	0.948	66.0	0.229	L = 0	JENDL-1
40.42						WGO= 0.28 ± 0.1	61SLAUGHTER+
40.396			[a] 0.948± 0.034 ± 0.012	66.0 ± 8.6			75DERRIEN+
40.37			[a] 1.25 ± 0.13				76WESTON+
41.298	2.5	44.083	0.084	43.77	0.229	L = 0	JENDL-2
41.298	2.0		[a] 0.091	44.2	0.23		79UKNDL
41.34	2.5	44.124	9.699-2	43.8	0.227	L = 0	ENDF-B-5
41.298	2.5	44.083	0.084	43.77	0.229	L = 0	JENDL-1
41.298			[a] 0.084				75DERRIEN+
41.34			[a] 0.097± 0.081				76WESTON+
41.791	2.5	44.354	0.355	43.77	0.229	L = 0	JENDL-2
41.791	3.0		[a] 0.415	44.2	0.23		79UKNDL
41.84	2.5	44.502	0.475	43.8	0.227	L = 0	ENDF-B-5
41.791	2.5	44.354	0.355	43.77	0.229	L = 0	JENDL-1
41.71						WGO= 0.1 ± 0.1	61SLAUGHTER+
41.791			[a] 0.355± 0.009 ± 0.003				75DERRIEN+
41.84			[a] 0.475± 0.095				76WESTON+
42.13	2.5	44.149	0.15	43.77	0.229	L = 0	JENDL-2
42.130	2.0		[a] 0.137	44.2	0.23		79UKNDL
42.13	2.5	44.149	0.15	43.77	0.229	L = 0	JENDL-1
42.64						WGO= 1.8 ± 0.8	61SLAUGHTER+

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
42.13			A 0.15 ± 0.009 ± 0.001				75DERRIEN+
43.294	2.5	19.034	0.805	18.0	0.229	L = 0	JENDL-2
43.294	3.0		A 0.733	44.2	0.23		79UKNDL
43.294	2.5	19.034	0.805	18.0	0.229	L = 0	JENDL-1
43.25						WGO= 0.38 ± 0.16	61SLAUGHTER+
43.294			A 0.805± 0.033 ± 0.01	18.0 ± 8.9			75DERRIEN+
43.42	2.5	45.29	1.263	43.8	0.227	L = 0	ENDF-B-5
43.42			A 1.263± 0.12				76WESTON+
43.574	2.5	37.011	0.582	36.2	0.229	L = 0	JENDL-2
43.574	2.0		A 0.530	44.2	0.23		79UKNDL
43.574	2.5	37.011	0.582	36.2	0.229	L = 0	JENDL-1
43.574			A 0.582± 0.035 ± 0.006	36.2 ±13.6			75DERRIEN+
44.416	2.5	44.117	0.118	43.77	0.229	L = 0	JENDL-2
44.416	2.0		A 0.147	44.2	0.23		79UKNDL
44.5	2.5	44.203	0.176	43.8	0.227	L = 0	ENDF-B-5
44.416	2.5	44.117	0.118	43.77	0.229	L = 0	JENDL-1
44.416			A 0.118± 0.009				75DERRIEN+
44.5			A 0.176± 0.09				76WESTON+
44.921	2.5	44.073	7.399-2	43.77	0.229	L = 0	JENDL-2
44.921	3.0		A 0.090	44.2	0.23		79UKNDL
44.92	2.5	44.132	0.105	43.8	0.227	L = 0	ENDF-B-5
44.921	2.5	44.073	7.399-2	43.77	0.229	L = 0	JENDL-1
44.921			A 0.074± 0.009				75DERRIEN+
44.92			A 0.105± 0.091				76WESTON+
46.073	2.5	44.694	0.665	43.8	0.229	L = 0	JENDL-2
46.073	3.0		A 0.691	43.8	0.23		79UKNDL
46.11	2.5	44.743	0.716	43.8	0.227	L = 0	ENDF-B-5
46.073	2.5	44.694	0.665	43.8	0.229	L = 0	JENDL-1
46.073			A 0.665± 0.018 ± 0.007	43.8 ± 8.6			75DERRIEN+
46.11			A 0.716± 0.12				76WESTON+
46.566	2.5	23.4	0.371	22.8	0.229	L = 0	JENDL-2
46.566	2.0		A 0.415	44.2	0.23		79UKNDL
46.56	2.5	23.486	0.459	22.8	0.227	L = 0	ENDF-B-5
46.566	2.5	23.4	0.371	22.8	0.229	L = 0	JENDL-1
46.566			A 0.371± 0.018 ± 0.003	22.8 ±14.0			75DERRIEN+
46.56			A 0.459± 0.116				76WESTON+
47.535	2.5	42.882	1.053	41.6	0.229	L = 0	JENDL-2
47.535	3.0		A 1.107	41.6	0.23		79UKNDL
47.59	2.5	42.988	1.161	41.6	0.227	L = 0	ENDF-B-5
47.535	2.5	42.882	1.053	41.6	0.229	L = 0	JENDL-1
47.535			A 1.053± 0.017 ± 0.012	41.6 ± 5.2			75DERRIEN+
47.59			A 1.161± 0.13				76WESTON+
48.765	2.5	40.942	0.713	40.0	0.229	L = 0	JENDL-2
48.765	3.0		A 0.755	40.0	0.23		79UKNDL
48.77	2.5	41.024	0.797	40.0	0.227	L = 0	ENDF-B-5
48.765	2.5	40.942	0.713	40.0	0.229	L = 0	JENDL-1
48.765			A 0.713± 0.018 ± 0.007	40.0 ± 8.0			75DERRIEN+
48.77			A 0.797± 0.13				76WESTON+
49.332	2.5	44.219	0.22	43.77	0.229	L = 0	JENDL-2
49.332	2.0		A 0.260	44.2	0.23		79UKNDL
49.38	2.5	44.327	0.3	43.8	0.227	L = 0	ENDF-B-5
49.332	2.5	44.219	0.22	43.77	0.229	L = 0	JENDL-1
49.332			A 0.22 ± 0.011 ± 0.002				75DERRIEN+
49.38			A 0.3 ± 0.111				76WESTON+
50.278	2.5	54.471	2.442	51.8	0.229	L = 0	JENDL-2
50.278	3.0		A 2.442	44.2	0.23		79UKNDL
50.278	2.5	54.471	2.442	51.8	0.229	L = 0	JENDL-1
50.278			A 2.442± 0.022 ± 0.042	51.8 ± 3.0			75DERRIEN+
50.847	2.5	36.422	0.393	35.8	0.229	L = 0	JENDL-2
50.847	2.0		A 0.393	44.2	0.23		79UKNDL
50.847	2.5	36.422	0.393	35.8	0.229	L = 0	JENDL-1
50.847			A 0.393± 0.02 ± 0.003	35.8 ±16.4			75DERRIEN+
51.984	2.5	51.814	1.385	50.2	0.229	L = 0	JENDL-2
51.984	2.0		A 1.385	44.2	0.23		79UKNDL

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
51.984	2.5	51.814	1.385	50.2	0.229	L = 0	JENDL-1
51.984			A 1.385± 0.021	50.2 ± 4.9			75DERRIEN+
			± 0.017				
53.014	2.5	44.164	0.165	43.77	0.229	L = 0	JENDL-2
53.014	3.0		A 0.165	44.2	0.23		79UKNDL
53.014	2.5	44.164	0.165	43.77	0.229	L = 0	JENDL-1
53.014			A 0.165± 0.012				75DERRIEN+
			± 0.001				
53.493	2.5	44.183	0.184	43.77	0.229	L = 0	JENDL-2
53.493	2.0		A 0.174	44.2	0.23		79UKNDL
53.493	2.5	44.183	0.184	43.77	0.229	L = 0	JENDL-1
53.493			A 0.184± 0.012				75DERRIEN+
			± 0.001				
54.407	2.5	44.072	0.073	43.77	0.229	L = 0	JENDL-2
54.407	3.0		A 0.730	44.2	0.23		79UKNDL
54.407	2.5	44.072	0.073	43.77	0.229	L = 0	JENDL-1
54.407			A 0.073± 0.012				75DERRIEN+
54.99	2.5	110.172	1.443	108.5	0.229	L = 0	JENDL-2
54.990	2.0		A 1.361	44.2	0.23		79UKNDL
54.99	2.5	110.172	1.443	108.5	0.229	L = 0	JENDL-1
54.99			A 1.443± 0.025	108.5 ± 6.9			75DERRIEN+
			± 0.002				
55.595	2.5	144.212	0.213	143.77	0.229	L = 0	JENDL-2
55.595	2.0		A 0.201	44.2	0.23		79UKNDL
55.595	2.5	144.212	0.213	143.77	0.229	L = 0	JENDL-1
55.595			A 0.213± 0.014				75DERRIEN+
			± 0.002				
55.945	2.5	145.431	1.432	143.77	0.229	L = 0	JENDL-2
55.945	3.0		A 1.432	44.2	0.23		79UKNDL
55.945	2.5	145.431	1.432	143.77	0.229	L = 0	JENDL-1
55.945			A 1.432± 0.034				75DERRIEN+
			± 0.018				
56.158	2.5	144.948	0.949	143.77	0.229	L = 0	JENDL-2
56.158	3.0		A 0.949	44.2	0.23		79UKNDL
56.158	2.5	144.948	0.949	143.77	0.229	L = 0	JENDL-1
56.158			A 0.949± 0.034				75DERRIEN+
			± 0.01				
57.372	2.5	185.375	4.146	181.0	0.229	L = 0	JENDL-2
57.372	2.0		A 0.391	44.2	0.23		79UKNDL
57.372	2.5	185.375	4.146	181.0	0.229	L = 0	JENDL-1
57.372			A 4.146± 0.029	91.0 ± 2.7			75DERRIEN+
			± 0.082				
59.066	2.5	108.018	0.589	107.2	0.229	L = 0	JENDL-2
59.066	2.0		A 0.556	44.2	0.23		79UKNDL
59.066	2.5	108.018	0.589	107.2	0.229	L = 0	JENDL-1
59.066			A 0.589± 0.028	107.2 ±19.4			75DERRIEN+
			± 0.004				
60.045	2.5	144.284	0.285	143.77	0.229	L = 0	JENDL-2
60.045	3.0		A 0.285	44.2	0.23		79UKNDL
60.045	2.5	144.284	0.285	143.77	0.229	L = 0	JENDL-1
60.045			A 0.285± 0.017				75DERRIEN+
60.381	2.5	144.139	0.14	143.77	0.229	L = 0	JENDL-2
60.381	2.0		A 0.132	44.2	0.23		79UKNDL
60.381	2.5	144.139	0.14	143.77	0.229	L = 0	JENDL-1
60.381			A 0.14 ± 0.017				75DERRIEN+
			± 0.001				
61.258	2.5	176.601	1.672	174.7	0.229	L = 0	JENDL-2
61.258	3.0		A 1.322	44.2	0.23		79UKNDL
61.258	2.5	176.601	1.672	174.7	0.229	L = 0	JENDL-1
61.258			A 1.672± 0.044	74.7 ± 9.6			75DERRIEN+
			± 0.017				
61.613	2.5	144.433	0.434	143.77	0.229	L = 0	JENDL-2
61.613	3.0		A 0.434	44.2	0.23		79UKNDL
61.613	2.5	144.433	0.434	143.77	0.229	L = 0	JENDL-1
61.613			A 0.434± 0.025				75DERRIEN+
			± 0.004				
62.549	2.5	144.221	0.222	143.77	0.229	L = 0	JENDL-2
62.549	2.0		A 0.209	44.2	0.23		79UKNDL
62.549	2.5	144.221	0.222	143.77	0.229	L = 0	JENDL-1
62.549			A 0.222± 0.016				75DERRIEN+
			± 0.001				
63.507	2.5	144.198	0.199	143.77	0.229	L = 0	JENDL-2

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
63.507	3.0		[a] 0.199	44.2	0.23		79UKNDL
63.507	2.5	144.198	0.199	143.77	0.229	L = 0	JENDL-1
63.507			[a] 0.199± 0.018 ± 0.001				75DERRIEN+
64.039	2.5	151.371	4.042	147.1	0.229	L = 0	JENDL-2
64.039	2.0		[a] 0.381	44.2	0.23		79UKNDL
64.039	2.5	151.371	4.042	147.1	0.229	L = 0	JENDL-1
64.039			[a] 4.042± 0.049 ± 0.074	47.1 ± 4.6			75DERRIEN+
64.539	2.5	140.483	1.954	138.3	0.229	L = 0	JENDL-2
64.539	3.0		[a] 1.954	44.2	0.23		79UKNDL
64.539	2.5	140.483	1.954	138.3	0.229	L = 0	JENDL-1
64.539			[a] 1.954± 0.052 ± 0.025	38.3 ± 9.2			75DERRIEN+
65.164	2.5	155.116	5.187	149.7	0.229	L = 0	JENDL-2
65.164	2.0		[a] 0.489	44.2	0.23		79UKNDL
65.164	2.5	155.116	5.187	149.7	0.229	L = 0	JENDL-1
65.164			[a] 5.187± 0.048 ± 0.109	49.7 ± 3.7			75DERRIEN+
65.733	2.5	120.119	1.09	118.8	0.229	L = 0	JENDL-2
65.733	3.0		[a] 1.090	44.2	0.23		79UKNDL
65.733	2.5	120.119	1.09	118.8	0.229	L = 0	JENDL-1
65.733			[a] 1.09 ± 0.046 ± 0.01	18.8 ±14.0			75DERRIEN+
66.314	2.5	176.465	1.036	175.2	0.229	L = 0	JENDL-2
66.314	2.0		[a] 0.977	44.2	0.23		79UKNDL
66.314	2.5	176.465	1.036	175.2	0.229	L = 0	JENDL-1
66.314			[a] 1.036± 0.052 ± 0.01	75.2 ±19.6			75DERRIEN+
66.874	2.5	174.234	2.105	171.9	0.229	L = 0	JENDL-2
66.874	3.0		[a] 2.105	44.2	0.23		79UKNDL
66.874	2.5	174.234	2.105	171.9	0.229	L = 0	JENDL-1
66.874			[a] 2.105± 0.044 ± 0.025	71.9 ± 8.1			75DERRIEN+
68.525	2.5	44.43	0.431	43.77	0.229	L = 0	JENDL-2
68.525	2.0		[a] 0.407	44.2	0.23		79UKNDL
68.525	2.5	44.43	0.431	43.77	0.229	L = 0	JENDL-1
68.525			[a] 0.431± 0.019 ± 0.003				75DERRIEN+
69.585	2.5	45.115	1.116	43.77	0.229	L = 0	JENDL-2
69.585	3.0		[a] 1.116	44.2	0.23		79UKNDL
69.585	2.5	45.115	1.116	43.77	0.229	L = 0	JENDL-1
69.585			[a] 1.116± 0.051 ± 0.013				75DERRIEN+
69.824	2.5	46.66	2.661	43.77	0.229	L = 0	JENDL-2
69.824	2.0		[a] 0.251	44.2	0.23		79UKNDL
69.824	2.5	46.66	2.661	43.77	0.229	L = 0	JENDL-1
69.824			[a] 2.661± 0.053 ± 0.04				75DERRIEN+
71.253	2.5	44.582	0.583	43.77	0.229	L = 0	JENDL-2
71.253	3.0		[a] 0.770	44.2	0.23		79UKNDL
71.253	2.5	44.582	0.583	43.77	0.229	L = 0	JENDL-1
71.253			[a] 0.583± 0.085 ± 0.006				75DERRIEN+
71.463	2.5	45.108	1.109	43.77	0.229	L = 0	JENDL-2
71.463	2.5	45.108	1.109	43.77	0.229	L = 0	JENDL-1
71.463			[a] 1.109± 0.079 ± 0.011				75DERRIEN+
71.841	2.5	45.033	1.034	43.77	0.229	L = 0	JENDL-2
71.841	2.5	45.033	1.034	43.77	0.229	L = 0	JENDL-1
71.841			[a] 1.034± 0.025 ± 0.01				75DERRIEN+
72.276	2.5	44.225	0.226	43.77	0.229	L = 0	JENDL-2
72.276	2.5	44.225	0.226	43.77	0.229	L = 0	JENDL-1
72.276			[a] 0.226± 0.021 ± 0.001				75DERRIEN+
74.969	2.5	44.48	0.481	43.77	0.229	L = 0	JENDL-2
74.969	2.5	44.48	0.481	43.77	0.229	L = 0	JENDL-1
74.969			[a] 0.481± 0.02 ± 0.004				75DERRIEN+
75.715	2.5	44.377	0.378	43.77	0.229	L = 0	JENDL-2
75.715	2.5	44.377	0.378	43.77	0.229	L = 0	JENDL-1

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
75.715			[a] 0.378± 0.034 ± 0.003				75DERRIEN+
75.943 75.943 75.943	2.5 2.5	44.514 44.514	0.515 0.515 [a] 0.515± 0.027 ± 0.009	43.77 43.77	0.229 0.229	L = 0 L = 0	JENDL-2 JENDL-1 75DERRIEN+
76.779 76.779 76.779	2.5 2.5	44.108 44.108	0.109 0.109 [a] 0.109	43.77 43.77	0.229 0.229	L = 0 L = 0	JENDL-2 JENDL-1 75DERRIEN+
78.191 78.191 78.191	2.5 2.5	12.315 12.315	1.486 1.486 [a] 1.486± 0.099 ± 0.015	10.3 10.3 10.3 ±17.4	0.229 0.229	L = 0 L = 0	JENDL-2 JENDL-1 75DERRIEN+
78.551 78.551 78.551	2.5 2.5	62.208 62.208	1.179 1.179 [a] 1.179± 0.105 ± 0.011	60.8 60.8 60.8 ±26.0	0.229 0.229	L = 0 L = 0	JENDL-2 JENDL-1 75DERRIEN+
79.555 79.555 79.555	2.5 2.5	44.729 44.729	0.73 0.73 [a] 0.73 ± 0.023 ± 0.005	43.77 43.77	0.229 0.229	L = 0 L = 0	JENDL-2 JENDL-1 75DERRIEN+
80.05 80.05 80.05	2.5 2.5	44.545 44.545	0.546 0.546 [a] 0.546± 0.029 ± 0.004	43.77 43.77	0.229 0.229	L = 0 L = 0	JENDL-2 JENDL-1 75DERRIEN+
80.393 80.393 80.393	2.5 2.5	44.587 44.587	0.588 0.588 [a] 0.588± 0.029 ± 0.004	43.77 43.77	0.229 0.229	L = 0 L = 0	JENDL-2 JENDL-1 75DERRIEN+
81.077 81.077 81.077	2.5 2.5	44.135 44.135	0.106 0.106 [a] 0.106± 0.039	43.77 43.77	0.229 0.229	L = 0 L = 0	JENDL-2 JENDL-1 75DERRIEN+
81.458 81.458 81.458	2.5 2.5	105.871 105.871	1.042 1.042 [a] 1.042± 0.081 ± 0.008	104.6 104.6 104.6 ±35.0	0.229 0.229	L = 0 L = 0	JENDL-2 JENDL-1 75DERRIEN+
82.089 82.089 82.089	2.5 2.5	28.383 28.383	1.454 1.454 [a] 1.454± 0.054 ± 0.015	26.7 26.7 26.7 ±14.0	0.229 0.229	L = 0 L = 0	JENDL-2 JENDL-1 75DERRIEN+
82.9 82.9 82.9	2.5 2.5	44.438 44.438	0.439 0.439 [a] 0.439± 0.024 ± 0.003	43.77 43.77	0.229 0.229	L = 0 L = 0	JENDL-2 JENDL-1 75DERRIEN+
83.37 83.37 83.37	2.5 2.5	44.43 44.43	0.431 0.431 [a] 0.431± 0.024 ± 0.003	43.77 43.77	0.229 0.229	L = 0 L = 0	JENDL-2 JENDL-1 75DERRIEN+
84.006 84.006 84.006	2.5 2.5	39.785 39.785	1.456 1.456 [a] 1.456± 0.027 ± 0.015	38.1 38.1 38.1 ± 8.7	0.229 0.229	L = 0 L = 0	JENDL-2 JENDL-1 75DERRIEN+
84.685 84.685 84.685	2.5 2.5	46.14 46.14	2.141 2.141 [a] 2.141± 0.044 ± 0.022	43.77 43.77	0.229 0.229	L = 0 L = 0	JENDL-2 JENDL-1 75DERRIEN+
86.61 86.61 86.61	2.5 2.5	44.224 44.224	0.225 0.225 [a] 0.225± 0.025 ± 0.001	43.77 43.77	0.229 0.229	L = 0 L = 0	JENDL-2 JENDL-1 75DERRIEN+
87.481 87.481 87.481	2.5 2.5	44.125 44.125	0.126 0.126 [a] 0.126± 0.029	43.77 43.77	0.229 0.229	L = 0 L = 0	JENDL-2 JENDL-1 75DERRIEN+
87.984 87.984 87.984	2.5 2.5	74.847 74.847	3.918 3.918 [a] 3.918± 0.053 ± 0.055	70.7 70.7 70.7 ± 6.3	0.229 0.229	L = 0 L = 0	JENDL-2 JENDL-1 75DERRIEN+
89.297 89.297	2.5 2.5	44.331 44.331	0.332 0.332	43.77 43.77	0.229 0.229	L = 0 L = 0	JENDL-2 JENDL-1

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
89.297			[a] 0.332± 0.061 ± 0.002				75DERRIEN+
89.602	2.5	89.293	2.364	86.7	0.229	L = 0	JENDL-2
89.602	2.5	89.293	2.364	86.7	0.229	L = 0	JENDL-1
89.602			[a] 2.354± 0.093 ± 0.024	86.7 ±16.1			75DERRIEN+
93.412	2.5	60.225	6.296	53.7	0.229	L = 0	JENDL-2
93.412	2.5	60.225	6.296	53.7	0.229	L = 0	JENDL-1
93.412			[a] 6.296± 0.055 ± 0.115	53.7 ± 4.0			75DERRIEN+
94.61	2.5	44.753	0.754	43.77	0.229	L = 0	JENDL-2
94.61	2.5	44.753	0.754	43.77	0.229	L = 0	JENDL-1
94.61			[a] 0.754± 0.03 ± 0.006				75DERRIEN+
95.285	2.5	44.359	0.36	43.77	0.229	L = 0	JENDL-2
95.285	2.5	44.359	0.36	43.77	0.229	L = 0	JENDL-1
95.285			[a] 0.36 ± 0.035 ± 0.003				75DERRIEN+
95.686	2.5	46.862	2.863	43.77	0.229	L = 0	JENDL-2
95.686	2.5	46.862	2.863	43.77	0.229	L = 0	JENDL-1
95.686			[a] 2.963± 0.041 ± 0.034				75DERRIEN+
96.1	2.5	46.905	2.906	43.77	0.229	L = 0	JENDL-2
96.1	2.5	46.905	2.906	43.77	0.229	L = 0	JENDL-1
96.1			[a] 2.906± 0.048 ± 0.037				75DERRIEN+
96.46	2.5	46.833	2.834	43.77	0.229	L = 0	JENDL-2
96.46	2.5	46.833	2.834	43.77	0.229	L = 0	JENDL-1
96.46			[a] 2.834± 0.052 ± 0.035				75DERRIEN+
97.423	2.5	44.276	0.277	43.77	0.229	L = 0	JENDL-2
97.423	2.5	44.276	0.277	43.77	0.229	L = 0	JENDL-1
97.423			[a] 0.277± 0.03 ± 0.001				75DERRIEN+
98.356	2.5	44.264	0.265	43.77	0.229	L = 0	JENDL-2
98.356	2.5	44.264	0.265	43.77	0.229	L = 0	JENDL-1
98.356			[a] 0.265± 0.03 ± 0.001				75DERRIEN+
100.156	2.5	45.074	1.075	43.77	0.229	L = 0	JENDL-2
100.156	2.5	45.074	1.075	43.77	0.229	L = 0	JENDL-1
100.156			[a] 1.075± 0.033 ± 0.009				75DERRIEN+
101.598	2.5	54.154	2.825	51.1	0.229	L = 0	JENDL-2
101.598	2.5	54.154	2.825	51.1	0.229	L = 0	JENDL-1
101.598			[a] 2.825± 0.058 ± 0.028	51.1 ±10.0			75DERRIEN+
102.555	2.5	44.247	0.248	43.77	0.229	L = 0	JENDL-2
102.555	2.5	44.247	0.248	43.77	0.229	L = 0	JENDL-1
102.555			[a] 0.248± 0.035 ± 0.001				75DERRIEN+
103.203	2.5	47.409	6.98	40.2	0.229	L = 0	JENDL-2
103.203	2.5	47.409	6.98	40.2	0.229	L = 0	JENDL-1
103.203			[a] 6.98 ± 0.063 ± 0.12	40.2 ± 4.5			75DERRIEN+
104.788	2.5	42.625	2.196	40.2	0.229	L = 0	JENDL-2
104.788	2.5	42.625	2.196	40.2	0.229	L = 0	JENDL-1
104.788			[a] 2.196± 0.059 ± 0.022	40.2 ±12.8			75DERRIEN+
106.148	2.5	50.823	6.824	43.77	0.229	L = 0	JENDL-2
106.148	2.5	50.823	6.824	43.77	0.229	L = 0	JENDL-1
106.148			[a] 6.824± 0.185 ± 0.136				75DERRIEN+
106.396	2.5	47.351	3.352	43.77	0.229	L = 0	JENDL-2
106.396	2.5	47.351	3.352	43.77	0.229	L = 0	JENDL-1
106.396			[a] 3.352± 0.18 ± 0.054				75DERRIEN+
107.615	2.5	45.924	1.925	43.77	0.229	L = 0	JENDL-2
107.615	2.5	45.924	1.925	43.77	0.229	L = 0	JENDL-1
107.615			[a] 1.925± 0.038 ± 0.019				75DERRIEN+

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
109.824	2.5	47.255	3.256	43.77	0.229	L = 0	JENDL-2
109.82*	2.5	47.255	3.256	43.77	0.229	L = 0	JENDL-1
109.824			a 3.256± 0.144 ± 0.042				75DERRIEN+
110.093	2.5	47.336	3.337	43.77	0.229	L = 0	JENDL-2
110.093	2.5	47.336	3.337	43.77	0.229	L = 0	JENDL-1
110.093			a 3.337± 0.144 ± 0.043				75DERRIEN+
111.17	2.5	44.373	0.374	43.77	0.229	L = 0	JENDL-2
111.17	2.5	44.373	0.374	43.77	0.229	L = 0	JENDL-1
111.17			a 0.374± 0.059 ± 0.003				75DERRIEN+
111.627	2.5	99.729	5.2	94.3	0.229	L = 0	JENDL-2
111.627	2.5	99.729	5.2	94.3	0.229	L = 0	JENDL-1
111.627			a 5.2 ± 0.102 ± 0.068	94.3 ±10.4			75DERRIEN+
112.752	2.5	44.413	0.414	43.77	0.229	L = 0	JENDL-2
112.752	2.5	44.413	0.414	43.77	0.229	L = 0	JENDL-1
112.752			a 0.414± 0.042 ± 0.003				75DERRIEN+
113.28	2.5	44.299	0.3	43.77	0.229	L = 0	JENDL-2
113.28	2.5	44.299	0.3	43.77	0.229	L = 0	JENDL-1
113.28			a 0.3				75DERRIEN+
113.907	2.5	79.57	1.741	77.6	0.229	L = 0	JENDL-2
113.907	2.5	79.57	1.741	77.6	0.229	L = 0	JENDL-1
113.907			a 1.741± 0.078 ± 0.014	77.6 ±23.0			75DERRIEN+
115.084	2.5	81.329	1.8	79.3	0.229	L = 0	JENDL-2
115.084	2.5	81.329	1.8	79.3	0.229	L = 0	JENDL-1
115.084			a 1.8 ± 0.081 ± 0.014	79.3 ±23.8			75DERRIEN+
115.777	2.5	44.7	0.701	43.77	0.229	L = 0	JENDL-2
115.777	2.5	44.7	0.701	43.77	0.229	L = 0	JENDL-1
115.777			a 0.701± 0.049 ± 0.004				75DERRIEN+
116.396	2.5	44.852	2.623	42.0	0.229	L = 0	JENDL-2
116.396	2.5	44.852	2.623	42.0	0.229	L = 0	JENDL-1
116.396			a 2.623± 0.081 ± 0.023	42.0 ±15.6			75DERRIEN+
117.656	2.5	44.029	0.03	43.77	0.229	L = 0	JENDL-2
117.656	2.5	44.029	0.03	43.77	0.229	L = 0	JENDL-1
117.656			a 0.03				75DERRIEN+
118.522	2.5	44.805	0.806	43.77	0.229	L = 0	JENDL-2
118.522	2.5	44.805	0.806	43.77	0.229	L = 0	JENDL-1
118.522			a 0.806± 0.046 ± 0.005				75DERRIEN+
119.823	2.5	46.236	2.237	43.77	0.229	L = 0	JENDL-2
119.823	2.5	46.236	2.237	43.77	0.229	L = 0	JENDL-1
119.823			a 2.237± 0.131 ± 0.022				75DERRIEN+
120.123	2.5	45.929	1.93	43.77	0.229	L = 0	JENDL-2
120.123	2.5	45.929	1.93	43.77	0.229	L = 0	JENDL-1
120.123			a 1.93 ± 0.131 ± 0.026				75DERRIEN+
121.982	2.5	40.345	3.216	36.9	0.229	L = 0	JENDL-2
121.982	2.5	40.345	3.216	36.9	0.229	L = 0	JENDL-1
121.982			a 3.216± 0.138 ± 0.033	36.9 ±19.0			75DERRIEN+
122.662	2.5	68.322	3.893	64.2	0.229	L = 0	JENDL-2
122.662	2.5	68.322	3.893	64.2	0.229	L = 0	JENDL-1
122.662			a 3.893± 0.222 ± 0.04	64.2 ±27.6			75DERRIEN+
123.283	2.5	60.063	3.534	56.3	0.229	L = 0	JENDL-2
123.283	2.5	60.063	3.534	56.3	0.229	L = 0	JENDL-1
123.283			a 3.534± 0.166 ± 0.035	56.3 ±20.5			75DERRIEN+
124.946	2.5	45.639	1.64	43.77	0.229	L = 0	JENDL-2
124.946	2.5	45.639	1.64	43.77	0.229	L = 0	JENDL-1
124.946			a 1.64 ± 0.054 ± 0.013				75DERRIEN+

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
125.819	2.5	45.034	1.035	43.77	0.229	L = 0	JENDL-2
125.819	2.5	45.034	1.035	43.77	0.229	L = 0	JENDL-1
125.819			A 1.035± 0.055 ± 0.007				75DERRIEN+
126.441	2.5	46.034	2.035	43.77	0.229	L = 0	JENDL-2
126.441	2.5	46.034	2.035	43.77	0.229	L = 0	JENDL-1
126.441			A 2.035± 0.057 ± 0.017				75DERRIEN+
127.415	2.5	44.249	0.25	43.77	0.229	L = 0	JENDL-2
127.415	2.5	44.249	0.25	43.77	0.229	L = 0	JENDL-1
127.415			A 0.25				75DERRIEN+
127.994	2.5	45.687	1.688	43.77	0.229	L = 0	JENDL-2
127.994	2.5	45.687	1.688	43.77	0.229	L = 0	JENDL-1
127.994			A 1.688± 0.056 ± 0.013				75DERRIEN+
129.677	2.5	44.224	0.225	43.77	0.229	L = 0	JENDL-2
129.677	2.5	44.224	0.225	43.77	0.229	L = 0	JENDL-1
129.677			A 0.225± 0.002				75DERRIEN+
130.72	2.5	45.357	1.358	43.77	0.229	L = 0	JENDL-2
130.72	2.5	45.357	1.358	43.77	0.229	L = 0	JENDL-1
130.72			A 1.358± 0.072 ± 0.009				75DERRIEN+
131.319	2.5	59.35	3.121	56.0	0.229	L = 0	JENDL-2
131.319	2.5	59.35	3.121	56.0	0.229	L = 0	JENDL-1
131.319			A 3.121± 0.132 ± 0.032	56.0 ±23.2			75DERRIEN+
132.18	2.5	44.874	0.875	43.77	0.229	L = 0	JENDL-2
132.18	2.5	44.874	0.875	43.77	0.229	L = 0	JENDL-1
132.18			A 0.875± 0.062 ± 0.006				75DERRIEN+
132.754	2.5	45.179	1.18	43.77	0.229	L = 0	JENDL-2
132.754	2.5	45.179	1.18	43.77	0.229	L = 0	JENDL-1
132.754			A 1.18 ± 0.059 ± 0.008				75DERRIEN+
133.657	2.5	54.113	1.784	52.1	0.229	L = 0	JENDL-2
133.657	2.5	54.113	1.784	52.1	0.229	L = 0	JENDL-1
133.657			A 1.784± 0.1 ± 0.014	52.1 ±30.5			75DERRIEN+
134.867	2.5	52.014	8.015	43.77	0.229	L = 0	JENDL-2
134.867	2.5	52.014	8.015	43.77	0.229	L = 0	JENDL-1
134.867			A 8.015± 0.317 ± 0.104				75DERRIEN+
135.449	2.5	48.13	4.131	43.77	0.229	L = 0	JENDL-2
135.449	2.5	48.13	4.131	43.77	0.229	L = 0	JENDL-1
135.449			A 4.131± 0.348 ± 0.042				75DERRIEN+
136.435	2.5	51.686	5.757	45.7	0.229	L = 0	JENDL-2
136.435	2.5	51.686	5.757	45.7	0.229	L = 0	JENDL-1
136.435			A 5.757± 0.145 ± 0.068	45.7 ±14.1			75DERRIEN+
137.103	2.5	45.293	1.294	43.77	0.229	L = 0	JENDL-2
137.103	2.5	45.293	1.294	43.77	0.229	L = 0	JENDL-1
137.103			A 1.294± 0.077 ± 0.009				75DERRIEN+
137.613	2.5	45.627	1.628	43.77	0.229	L = 0	JENDL-2
137.613	2.5	45.627	1.628	43.77	0.229	L = 0	JENDL-1
137.613			A 1.628± 0.064 ± 0.012				75DERRIEN+
138.774	2.5	44.715	3.886	40.6	0.229	L = 0	JENDL-2
138.774	2.5	44.715	3.886	40.6	0.229	L = 0	JENDL-1
138.77[illegible]			A 3.886± 0.108 ± 0.04	40.6 ±15.4			75DERRIEN+
139.963	2.5	45.252	1.253	43.77	0.229	L = 0	JENDL-2
139.963	2.5	45.252	1.253	43.77	0.229	L = 0	JENDL-1
139.963			A 1.253± 0.071 ± 0.008				75DERRIEN+
140.498	2.5	46.435	2.436	43.77	0.229	L = 0	JENDL-2
140.498	2.5	46.435	2.436	43.77	0.229	L = 0	JENDL-1
140.498			A 2.436± 0.073 ± 0.021				75DERRIEN+

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
141.31	2.5	48.228	4.229	43.77	0.229	L = 0	JENDL-2
141.31	2.5	48.228	4.229	43.77	0.229	L = 0	JENDL-1
141.31			A 4.229± 0.108 ± 0.055				75DERRIEN+
141.52	2.5	47.255	3.256	43.77	0.229	L = 0	JENDL-2
141.52	2.5	47.255	3.256	43.77	0.229	L = 0	JENDL-1
141.52			A 3.256± 0.106 ± 0.039				75DERRIEN+
143.036	2.5	44.33	0.331	43.77	0.229	L = 0	JENDL-2
143.036	2.5	44.33	0.331	43.77	0.229	L = 0	JENDL-1
143.036			A 0.331± 0.066 ± 0.002				75DERRIEN+
144.869	2.5	45.42	1.421	43.77	0.229	L = 0	JENDL-2
144.869	2.5	45.42	1.421	43.77	0.229	L = 0	JENDL-1
144.869			A 1.421± 0.068 ± 0.01				75DERRIEN+
145.438	2.5	44.349	0.35	43.77	0.229	L = 0	JENDL-2
145.438	2.5	44.349	0.35	43.77	0.229	L = 0	JENDL-1
145.438			A 0.35				75DERRIEN+
146.436	2.5	45.738	1.739	43.77	0.229	L = 0	JENDL-2
146.436	2.5	45.738	1.739	43.77	0.229	L = 0	JENDL-1
146.436			A 1.739± 0.07 ± 0.012				75DERRIEN+
148.031	2.5	56.301	12.302	43.77	0.229	L = 0	JENDL-2
148.031	2.5	56.301	12.302	43.77	0.229	L = 0	JENDL-1
148.031			A 12.302± 0.138 ± 0.198				75DERRIEN+
149.141	2.5	47.925	3.926	43.77	0.229	L = 0	JENDL-2
149.141	2.5	47.925	3.926	43.77	0.229	L = 0	JENDL-1
149.141			A 3.926± 0.076 ± 0.039				75DERRIEN+

* A denotes $2g\Gamma_n$

** L : orbital angular momentum

GFS: $\sigma\Gamma_f$

WGO: $2g\Gamma_n{}^0$

Table 2 Energy dependence of unresolved resonance parameters and the calculated cross sections

The energy dependence of the parameters are given as the ratio to the initial guess values listed below:

$S_0 = 0.967 \times 10^{-4}$, $S_1 = 2.27 \times 10^{-4}$

$\Gamma_f = 0.23$ meV , $D_{obs} = 0.432$ eV .

Fixed parameters: R = 9.37 fm $\Gamma_\gamma = 43.77$ meV

E_n (keV)	S_0, S_1	Γ_f	D	$\sigma_{n,T}$ (barns)	$\sigma_{n,\gamma}$ (barns)	$\sigma_{n,f}$ (barns)
0.15	1.00	2.16	1.00	43.8	30.4	0.34
0.175	0.81	2.64	"	35.6	22.9	0.31
0.25	0.96	1.94	"	35.4	22.3	0.22
0.35	1.02	2.64	"	33.0	19.7	0.27
0.45	1.06	1.85	"	31.1	17.9	0.171
0.55	0.91	2.00	"	26.7	14.0	0.145
0.7	1.04	2.01	"	26.8	13.8	0.143
0.9	0.89	1.56	"	23.0	10.5	0.086
1.1	0.94	2.55	"	22.5	9.87	0.129
1.25	1.04	1.71	"	23.0	10.15	0.090
1.5	1.04	1.54	"	21.9	9.19	0.073
1.75	1.00	1.27	"	20.8	8.23	0.054
2.0	1.03	1.11	"	20.5	7.85	0.045
2.25	1.05	1.55	"	20.1	7.48	0.060
3.0	1.07	1.70	0.99	19.2	6.57	0.058
3.5	1.03	1.37	"	18.3	5.88	0.042
4.5	1.00	1.56	"	17.3	5.06	0.041
5.0	1.04	1.90	"	17.3	4.97	0.049
6.0	1.06	1.93	"	16.9	4.64	0.046
7.0	1.01	1.71	"	16.3	4.20	0.037
8.0	0.96	2.55	"	15.7	3.79	0.050
9.0	0.96	5.08	0.98	15.5	3.58	0.092
10.0	0.98	1.90	"	15.4	3.54	0.035
12.5	1.00	1.27	"	15.1	3.33	0.022
17.5	1.07	0.94	0.97	14.8	3.15	0.015
20.0	0.92	1.05	0.96	14.1	2.70	0.015
30.0	0.98	1.07	0.95	13.8	2.53	0.014

Table 3 Resonance integrals for ^{241}Am

	fission (barns)	capture (barns)
Calculated		
JENDL-2	14.7	1299
JENDL-1	14.8	1568
ENDF/B-V	13.7	1422
Lynn et al.[22]	11.1	1499
Experimental		
67 Bak[25]	21 ± 2	2400 ± 200
69 Schuman[26]		1100 ± 72
70 Hellstrand[27]		1450*
73 Harbour[28]		1538 ± 118
75 Zhuravlev[29]	27.7 ± 1.6	
76 Gavrilov[30]	22.5 ± 1.7	

* calculated by assuming $\sigma_{(n,\gamma)}$ = 600 barns

Table 4 Level scheme, level density parameters and Q-values for ^{241}Am

a) Level scheme of ^{241}Am

No.	Energy (keV)	I^{π}	No.	Energy (keV)	I^{π}
G.S.	0	5/2 -	9	471.8	3/2 -
1	41.2	7/2 -	10	504.5	5/2 -
2	93.6	9/2 -	11	549.0	7/2 -
3	158.0	11/2 -	12	623.1	1/2 +
4	205.9	5/2 +	13	636.9	3/2 -
5	234.0	7/2 +	14	652.1	1/2 -
6	271.0	9/2 +	15	653.2	3/2 +
7	319.0	11/2 +	16	670.2	3/2 +
8	375.0	13/2 +			

Levels above 732 keV are assumed to be overlapping.

b) Level density Parameters

	^{241}Am	^{242}Am
a (MeV^{-1})	26.0691	26.5324
$\alpha_M^2/U^{1/2}$ ($MeV^{1/2}$)	17.5585	17.7628
Δ (MeV)	0.430	0.0
C_0 (MeV)	5642.73	5766.83
E_x (MeV)	3.5524	3.1198
S_n (MeV)	6.5825	5.5412

c) Q-values and threshold energies (MeV)

	Q-value	Threshold energy
(n,2n)	-6.5825	6.6100
(n,3n)	-12.6002	12.6529
(n,4n)	-19.7000	19.7823

Table 5 Resonance parameters of ^{243}Am

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH* (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS**	REFERENCE
-2.0	2.5	40.504	1.4	39.0	0.12	L = 0	JENDL-2
-2.0	2.5	40.117	1.1172	39.0		L = 0	ENDF-B-5
-2.0	2.5	40.1172	1.11723	39.0	1 -7	L = 0	JENDL-1
-2.0				(42.0)		GNO= 0.84	70BERRETH+
0.0107		34.0				WGO= 0.001	59COTE
0.42	2.5	39.1048	8.424-4	39.0	0.12	L = 0	JENDL-2
0.42	2.5	39.001	8.425-4	39.0		L = 0	ENDF-B-5
0.42	2.5	39.0008	8.424-4	39.0	1 -7	L = 0	JENDL-1
0.42				39.0		GNO= 0.0013	70BERRETH+
0.416± 0.003		39.0 ± 2.0	[a] 0.00084±0.00005				76BELANOVA+
0.983	2.5	38.1186	1.457-2	38.0	0.12	L = 0	JENDL-2
0.983	2.5	38.015	0.0146	38.0		L = 0	ENDF-B-5
0.983	2.5	38.0146	1.457-2	38.0	1 -7	L = 0	JENDL-1
0.976		78.0 ±29.0	0.017± 0.003	78.0 ±29.0			59COTE
0.983				40.0		GNO= 0.0151	70BERRETH+
0.983± 0.001				36.0 ± 2.0		WGO= 0.0143± 0.0007	74SIMPSON+
0.977± 0.004		37.0 ± 2.0	[a] 0.0134± 0.0003				76BELANOVA+
1.356	2.5	44.2102	1.10625	43.0	0.12	L = 0	JENDL-2
1.356	2.5	44.11	1.11	43.0		L = 0	ENDF-B-5
1.356	2.5	44.1063	1.10625	43.0	1 -7	L = 0	JENDL-1
1.353		43.8 ± 3.3	0.82 ± 0.08	43.0 ± 3.3			59COTE
1.356				43.0		GNO= 0.95	70BERRETH+
1.356± 0.001				43.0 ± 2.0		WGO= 0.951± 0.04	74SIMPSON+
1.355± 0.004		56.0 ± 1.0	[a] 0.89 ± 0.007				76BELANOVA+
1.744	2.5	39.3443	0.24035	39.0	0.12	L = 0	JENDL-2
1.744	2.5	39.24	0.24	39.0		L = 0	ENDF-B-5
1.744	2.5	39.2403	0.24035	39.0	1 -7	L = 0	JENDL-1
1.74		30.5 ± 9.1	0.18 ± 0.01	30.2 ± 9.1			59COTE
1.746				40.0		GNO= 0.181	70BERRETH+
1.744± 0.001				38.0 ± 2.0		WGO= 0.182± 0.008	74SIMPSON+
1.744± 0.005		39.0 ± 1.0	[a] 0.208± 0.002				76BELANOVA+
3.14	2.5	32.1153	1.134-2	32.0	0.12	L = 0	JENDL-2
3.14	2.5	32.011	0.0113	32.0		L = 0	ENDF-B-5
3.14	2.5	32.0113	1.134-2	32.0	1 -7	L = 0	JENDL-1
3.141				37.0		GNO= 0.0066	70BERRETH+
3.14 ± 0.001				27.0 ± 6.0		WGO= 0.0062± 0.0005	74SIMPSON+
3.134± 0.009		47.0 ± 3.0	[a] 0.012± 0.003				76BELANOVA+
3.424	2.5	38.3908	2.868-1	38.0	0.12	L = 0	JENDL-2
3.424	2.5	38.287	0.287	38.0		L = 0	ENDF-B-5
3.424	2.5	38.2868	2.868-1	38.0	1 -7	L = 0	JENDL-1
3.42		42.2 ± 3.0	0.21 ± 0.01	(42.0)			59COTE
3.43				(42.0)		GNO= 0.1536	70BERRETH+
3.424± 0.001				36.0 ± 4.0		WGO= 0.156± 0.006	74SIMPSON+
3.424± 0.009		45.0 ± 2.0	[a] 0.253± 0.008				76BELANOVA+
3.845	2.5	45.1171	1.313-2	45.0	0.12	L = 0	JENDL-2
3.845	2.5	43.013	0.0131	43.0		L = 0	ENDF-B-5
3.845	2.5	45.0131	1.313-2	45.0	1 -7	L = 0	JENDL-1
3.857				56.0		GNO= 0.0068	70BERRETH+
3.845± 0.001				43.0 ± 6.0		WGO= 0.0066± 0.0006	74SIMPSON+
3.844± 0.009		22.0 ± 5.0	[a] 0.009± 0.001				76BELANOVA+
5.125	2.5	39.4187	3.146-1	39.0	0.12	L = 0	JENDL-2
5.125	2.5	39.315	0.315	39.0		L = 0	ENDF-B-5
5.125	2.5	39.3247	3.146-1	39.0	0.01	L = 0	JENDL-1
5.12		42.2 ± 3.0	0.22 ± 0.02	(42.0)			59COTE
5.141				(42.0)		GNO= 0.137	70BERRETH+
5.125± 0.005				39.0 ± 3.0		WGO= 0.14 ± 0.006	74SIMPSON+
5.12 ± 0.012		63.0 ± 2.0	[a] 0.26 ± 0.006				76BELANOVA+
6.554	2.5	38.0717	0.96771	37.0	0.12	L = 0	JENDL-2
6.554	2.5	37.968	0.968	37.0		L = 0	ENDF-B-5
6.554	2.5	37.9777	0.96771	37.0	0.01	L = 0	JENDL-1
6.54		42.8 ± 3.0	0.83 ± 0.04	(42.0)			59COTE
6.572				(42.0)		GNO= 0.3556	70BERRETH+
6.554± 0.005				37.0 ± 3.0		WGO= 0.39 ± 0.015	74SIMPSON+
6.551± 0.015		50.0 ± 3.0	[a] 0.794± 0.044				76BELANOVA+
7.067	2.5	40.1758	7.177-2	40.0	0.12	L = 0	JENDL-2
7.067	2.5	40.072	0.0718	40.0		L = 0	ENDF-B-5
7.067	2.5	40.0818	7.177-2	40.0	0.01	L = 0	JENDL-1
7.085				(42.0)		GNO= 0.0269	70BERRETH+
7.067± 0.005				40.0 ± 6.0		WGO= 0.027± 0.002	74SIMPSON+
7.063± 0.017		46.0 ± 3.0	[a] 0.072± 0.011				76BELANOVA+
7.863	2.5	40.4359	1.33195	39.0	0.12	L = 0	JENDL-2
7.863	2.5	40.33	1.33	39.0		L = 0	ENDF-B-5
7.863	2.5	40.3419	1.33195	39.0	0.01	L = 0	JENDL-1
7.84		42.9 ± 3.0	0.93 ± 0.05	(42.0)			59COTE
7.886				(42.0)		GNO= 0.4547	70BERRETH+

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
7.863± 0.005				39.0 ± 4.0		WGO= 0.49 ± 0.02	74SIMPSON+
7.86 ± 0.02		36.0 ± 9.0	[a] 1.58 ± 0.13				76BELANOVA+
8.377	2.5	39.1127	8.682-3	39.0	0.12	L = 0	JENDL-2
8.377	2.5	39.009	0.00868	39.0		L = 0	ENDF-B-5
8.377	2.5	39.0187	8.682-3	39.0	0.01	L = 0	JENDL-1
8.447				(42.0)		GNO= 0.0044	70BERRETH+
8.377± 0.005				39.0 ± 5.0		WGO= 0.0023± 0.001	74SIMPSON+
8.39 ± 0.02		40.0 ± 2.0	[a] 0.01 ± 0.002				76BELANOVA+
8.77	2.5	37.2225	1.184-1	37.0	0.12	L = 0	JENDL-2
8.77	2.5	37.118	0.118	37.0		L = 0	ENDF-B-5
8.77	2.5	37.1285	1.184-1	37.0	0.01	L = 0	JENDL-1
8.8				(42.0)		GNO= 0.0406	70BERRETH+
8.77 ± 0.005				37.0 ±10.0		WGO= 0.04 ± 0.002	74SIMPSON+
8.77 ± 0.02		46.0 ± 2.0	[a] 0.113± 0.002				76BELANOVA+
9.314	2.5	39.2566	1.525-1	39.0	0.12	L = 0	JENDL-2
9.314	2.5	39.153	0.153	39.0		L = 0	ENDF-B-5
9.314	2.5	39.1626	1.525-1	39.0	0.01	L = 0	JENDL-1
9.345				(42.0)		GNO= 0.048	70BERRETH+
9.314± 0.008				39.0 ± 9.0		WGO= 0.05 ± 0.003	74SIMPSON+
9.32 ± 0.02		43.0 ± 2.0	[a] 0.133± 0.002				76BELANOVA+
10.314	2.5	49.5536	4.496-1	49.0	0.12	L = 0	JENDL-2
10.314	2.5	49.45	0.45	49.0		L = 0	ENDF-B-5
10.314	2.5	49.4596	4.496-1	49.0	0.01	L = 0	JENDL-1
10.3		42.2 ± 3.0	0.23 ± 0.05	(42.0)			S9COTE
10.337				(42.0)		GNO= 0.125	70BERRETH+
10.314± 0.008				49.0 ± 5.0		WGO= 0.149± 0.01	74SIMPSON+
10.31 ± 0.03		47.0 ± 2.0	[a] 0.433± 0.007				76BELANOVA+
10.877	2.5	39.1172	1.319-2	39.0	0.12	L = 0	JENDL-2
10.877	2.5	39.013	0.0132	39.0		L = 0	ENDF-B-5
10.877	2.5	39.0232	1.319-2	39.0	0.01	L = 0	JENDL-1
10.885				(42.0)		GNO= 0.005	70BERRETH+
10.877± 0.008				(39.0)		WGO= 0.004± 0.002	74SIMPSON+
10.87 ± 0.04			[a] 0.013± 0.002				76BELANOVA+
11.278	2.5	41.3894	2.854-1	41.0	0.12	L = 0	JENDL-2
11.278	2.5	41.285	0.285	41.0		L = 0	ENDF-B-5
11.278	2.5	41.2955	2.854-1	41.0	0.01	L = 0	JENDL-1
11.317				(42.0)		GNO= 0.084	70BERRETH+
11.278± 0.008				41.0 ± 6.0		WGO= 0.086± 0.004	74SIMPSON+
11.27 ± 0.04		49.0 ± 2.0	[a] 0.267± 0.003				76BELANOVA+
11.693	2.5	26.21	1.060-1	26.0	0.12	L = 0	JENDL-2
11.693	2.5	26.106	0.106	26.0		L = 0	ENDF-B-5
11.693	2.5	26.116	1.060-1	26.0	0.01	L = 0	JENDL-1
11.733				(42.0)		GNO= 0.0324	70BERRETH+
11.693± 0.008				26.0 ±14.0		WGO= 0.03 ± 0.002	74SIMPSON+
11.68 ± 0.05		35.0 ± 4.0	[a] 0.094± 0.002				76BELANOVA+
12.122	2.5	37.2781	1.740-1	37.0	0.12	L = 0	JENDL-2
12.122	2.5	37.174	0.174	37.0		L = 0	ENDF-B-5
12.122	2.5	37.1841	1.740-1	37.0	0.01	L = 0	JENDL-1
12.169				(42.0)		GNO= 0.0497	70BERRETH+
12.122± 0.008				37.0 ±11.0		WGO= 0.049± 0.003	74SIMPSON+
12.12 ± 0.06		41.0 ± 3.0	[a] 0.152± 0.003				76BELANOVA+
12.877	2.5	38.5083	2.40426	36.0	0.12	L = 0	JENDL-2
12.877	2.5	38.4	2.4	36.0		L = 0	ENDF-B-5
12.877	2.5	38.4143	2.40426	36.0	0.01	L = 0	JENDL-1
12.8		43.5 ± 3.0	1.5 ± 0.2	(42.0)			S9COTE
12.921				(42.0)		GNO= 0.6627	70BERRETH+
12.877± 0.008				36.0 ± 6.0		WGO= 0.68 ± 0.03	74SIMPSON+
12.87 ± 0.06		43.0 ± 4.0	[a] 2.2 ± 0.2				76BELANOVA+
13.152	2.5	42.5002	1.39623	41.0	0.12	L = 0	JENDL-2
13.152	2.5	42.4	1.4	41.0		L = 0	ENDF-B-5
13.152	2.5	42.4062	1.39623	41.0	0.01	L = 0	JENDL-1
13.1		42.8 ± 3.0	0.8 ± 0.2	(42.0)			S9COTE
13.201				(42.0)		GNO= 0.3668	70BERRETH+
13.152± 0.008				41.0 ± 8.0		WGO= 0.4 ± 0.02	74SIMPSON+
13.15 ± 0.06		45.0 ± 5.0	[a] 1.0 ± 0.08				76BELANOVA+
15.143	2.5	39.2013	9.723-2	39.0	0.12	L = 0	JENDL-2
15.143	2.5	39.097	0.0973	39.0		L = 0	ENDF-B-5
15.143	2.5	39.1073	9.728-2	39.0	0.01	L = 0	JENDL-1
15.21				(42.0)		GNO= 0.0325	70BERRETH+
15.143± 0.009				(39.0)		WGO= 0.019± 0.007	74SIMPSON+
15.12 ± 0.07		33.0 ±15.0	[a] 0.07 ± 0.007				76BELANOVA+
15.404	2.5	45.4384	1.33443	44.0	0.12	L = 0	JENDL-2
15.404	2.5	45.33	1.33	44.0		L = 0	ENDF-B-5
15.404	2.5	45.3444	1.33443	44.0	0.01	L = 0	JENDL-1
15.3		42.6 ± 3.0	0.63 ± 0.3	(42.0)			S9COTE

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
15.469				(42.0)		GNO= 0.3058	70BERRETH+
15.404± 0.009				44.0 ±11.0		WGO= 0.36 ± 0.03	74SIMPSON+
15.39 ± 0.07		37.0 ± 5.0	[a] 0.36 ± 0.08				76BELANOVA+
16.21	2.5	48.6556	5.515-1	48.0	0.12	L = 0	JENDL-2
16.21	2.5	48.552	0.552	48.0		L = 0	ENDF-B-5
16.21	2.5	48.5616	5.515-1	48.0	0.01	L = 0	JENDL-1
16.278				(42.0)		GNO= 0.1317	70BERRETH+
16.21 ± 0.009				48.0 ± 9.0		WGO= 0.143± 0.007	74SIMPSON+
16.2 ± 0.07		39.0 ± 3.0	[a] 0.518± 0.009				76BELANOVA+
16.583	2.5	36.2995	1.954-1	36.0	0.12	L = 0	JENDL-2
16.583	2.5	36.195	0.195	36.0		L = 0	ENDF-B-5
16.583	2.5	36.2055	1.954-1	36.0	0.01	L = 0	JENDL-1
16.645				(42.0)		GNO= 0.048	70BERRETH+
16.583± 0.009				36.0 ±10.0		WGO= 0.048± 0.004	74SIMPSON+
16.56 ± 0.07		27.0 ± 7.0	[a] 0.174± 0.005				76BELANOVA+
17.874	2.5	42.3323	2.282-1	42.0	0.12	L = 0	JENDL-2
17.874	2.5	42.228	0.228	42.0		L = 0	ENDF-B-5
17.874	2.5	42.2383	2.282-1	42.0	0.01	L = 0	JENDL-1
17.941				(42.0)		GNO= 0.0517	70BERRETH+
17.874± 0.009				42.0 ±10.0		WGO= 0.055± 0.03	74SIMPSON+
17.84 ± 0.07		35.0 ± 8.0	[a] 0.21 ± 0.007				76BELANOVA+
18.158	2.5	39.1637	5.965-2	39.0	0.12	L = 0	JENDL-2
18.158	2.5	39.06	0.0597	39.0		L = 0	ENDF-B-5
18.158	2.5	39.0697	5.965-2	39.0	0.01	L = 0	JENDL-1
18.246				(42.0)		GNO= 0.0128	70BERRETH+
18.158± 0.009				(39.0)		WGO= 0.014± 0.002	74SIMPSON+
18.14 ± 0.07		27.0 ±15.0	[a] 0.046± 0.007				76BELANOVA+
19.533	2.5	39.3382	0.23424	39.0	0.12	L = 0	JENDL-2
19.533	2.5	39.234	0.234	39.0		L = 0	ENDF-B-5
19.533	2.5	39.2442	0.23424	39.0	0.01	L = 0	JENDL-1
19.606				(42.0)		GNO= 0.0557	70BERRETH+
19.533± 0.009						WGO= 0.05 ± 0.004	74SIMPSON+
19.5 ± 0.07		27.0 ±10.0	[a] 0.193± 0.007				76BELANOVA+
19.915	2.5	39.2066	0.10264	39.0	0.12	L = 0	JENDL-2
19.915	2.5	39.103	0.103	39.0		L = 0	ENDF-B-5
19.915	2.5	39.1126	0.10264	39.0	0.01	L = 0	JENDL-1
20.009				(42.0)		GNO= 0.0256	70BERRETH+
19.915± 0.01				(39.0)		WGO= 0.02 ± 0.004	74SIMPSON+
19.88 ± 0.07		40.0 ±20.0	[a] 0.085± 0.006				76BELANOVA+
20.974	2.5	39.562	4.579-1	39.0	0.12	L = 0	JENDL-2
20.974	2.5	39.458	0.458	39.0		L = 0	ENDF-B-5
20.974	2.5	39.558	4.579-1	39.0	0.1	L = 0	JENDL-1
21.098				(42.0)		GNO= 0.157	70BERRETH+
20.974± 0.01				(39.0)		WGO= 0.1 ± 0.01	74SIMPSON+
20.94 ± 0.07		29.0 ±15.0	[a] 0.54 ± 0.18				76BELANOVA+
21.115	2.5	40.2068	1.10283	39.0	0.12	L = 0	JENDL-2
21.115	2.5	40.1	1.1	39.0		L = 0	ENDF-B-5
21.115	2.5	40.2028	1.10283	39.0	0.1	L = 0	JENDL-1
21.225				(42.0)		GNO= 0.1775	70BERRETH+
21.115± 0.01				(39.0)		WGO= 0.24 ± 0.02	74SIMPSON+
21.09 ± 0.07		16.0 ±10.0	[a] 0.66 ± 0.22				76BELANOVA+
21.872	2.5	39.2583	1.543-1	39.0	0.12	L = 0	JENDL-2
21.872	2.5	39.154	0.154	39.0		L = 0	ENDF-B-5
21.872	2.6	39.2543	1.543-1	39.0	0.1	L = 0	JENDL-1
21.997				(42.0)		GNO= 0.0389	70BERRETH+
21.872± 0.01				(39.0)		WGO= 0.033± 0.003	74SIMPSON+
21.85 ± 0.08		27.0	[a] 0.14 ± 0.02				76BELANOVA+
22.011	2.5	39.1556	5.160-2	39.0	0.12	L = 0	JENDL-2
22.011	2.5	39.052	0.0516	39.0		L = 0	ENDF-B-5
22.011	2.5	39.1516	5.160-2	39.0	0.1	L = 0	JENDL-1
22.011± 0.01				(39.0)		WGO= 0.011± 0.005	74SIMPSON+
22.01 ± 0.08							76BELANOVA+
22.6	2.5	39.6269	5.229-1	39.0	0.12	L = 0	JENDL-2
22.6	2.5	39.523	0.523	39.0		L = 0	ENDF-B-5
22.6	2.5	39.6229	5.229-1	39.0	0.1	L = 0	JENDL-1
22.623				(42.0)		GNO= 0.0574	70BERRETH+
22.6 ± 0.01				(39.0)		WGO= 0.11 ± 0.01	74SIMPSON+
22.59 ± 0.09		33.0	[a] 1.0 ± 0.6				76BELANOVA+
22.739	2.5	40.4392	1.33519	39.0	0.12	L = 0	JENDL-2
22.739	2.5	40.34	1.34	39.0		L = 0	ENDF-B-5
22.739	2.5	40.4352	1.33519	39.0	0.1	L = 0	JENDL-1
22.826				(42.0)		GNO= 0.3203	70BERRETH+
22.739± 0.01				(39.0)		WGO= 0.28 ± 0.03	74SIMPSON+
22.72 ± 0.09		19.0	[a] 0.65 ± 0.5				76BELANOVA+
24.454	2.5	40.0436	9.395-1	39.0	0.12	L = 0	JENDL-2

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
24.454	2.5	39.94	0.94	39.0		L = 0	ENDF-B-5
24.454	2.5	40.0396	9.395-1	39.0	0.1	L = 0	JENDL-1
24.588				(42.0)		GNO= 0.1944	70BERRETH+
24.454± 0.01				(39.0)		WGO= 0.19 ± 0.014	74SIMPSON+
24.39 ± 0.09		22.0	[a] 0.73 ± 0.02				76BELANOVA+
25.415	2.5	39.2653	1.613-1	39.0	0.12	L = 0	JENDL-2
25.415	2.5	39.161	0.161	39.0		L = 0	ENDF-B-5
25.415	2.5	39.2613	1.613-1	39.0	0.1	L = 0	JENDL-1
25.415± 0.01				(39.0)		WGO= 0.032± 0.005	74SIMPSON+
25.38 ± 0.1		40.0	[a] 0.14 ± 0.02				76BELANOVA+
26.237	2.5	39.145	4.097-2	39.0	0.12	L = 0	JENDL-2
26.237	2.5	39.041	0.041	39.0		L = 0	ENDF-B-5
26.237	2.5	39.141	4.097-2	39.0	0.1	L = 0	JENDL-1
26.237± 0.01				(39.0)		WGO= 0.008± 0.004	74SIMPSON+
26.3 ± 0.1		31.0	[a] 0.06 ± 0.01				76BELANOVA+
26.75	2.5	40.759	1.65505	39.0	0.12	L = 0	JENDL-2
26.75	2.5	40.66	1.66	39.0		L = 0	ENDF-B-5
26.75	2.5	40.7551	1.65505	39.0	0.1	L = 0	JENDL-1
26.75 ± 0.01				(39.0)		WGO= 0.32 ± 0.02	74SIMPSON+
26.75 ± 0.1			[a] 1.16 ± 0.03				76BELANOVA+
27.355	2.5	39.627	0.52302	39.0	0.12	L = 0	JENDL-2
27.355	2.5	39.523	0.523	39.0		L = 0	ENDF-B-5
27.355	2.5	39.623	0.52302	39.0	0.1	L = 0	JENDL-1
27.355± 0.01				(39.0)		WGO= 0.1 ± 0.01	74SIMPSON+
27.34 ± 0.11			[a] 0.43 ± 0.02				76BELANOVA+
28.735	2.5	40.1922	1.08818	39.0	0.12	L = 0	JENDL-2
28.735	2.5	40.09	1.09	39.0		L = 0	ENDF-B-5
28.735	2.5	40.1882	1.08818	39.0	0.1	L = 0	JENDL-1
28.735± 0.01				(39.0)		WGO= 0.203± 0.01	74SIMPSON+
28.73 ± 0.12			[a] 0.97 ± 0.12				76BELANOVA+
29.3	2.5	39.8347	7.307-1	39.0	0.12	L = 0	JENDL-2
29.3	2.5	39.731	0.731	39.0		L = 0	ENDF-B-5
29.3	2.5	39.8307	7.307-1	39.0	0.1	L = 0	JENDL-1
29.3 ± 0.01				(39.0)		WGO= 0.135± 0.01	74SIMPSON+
29.29 ± 0.12			[a] 0.68 ± 0.15				76BELANOVA+
30.13	2.5	39.6529	5.489-1	39.0	0.12	L = 0	JENDL-2
30.13	2.5	39.549	0.549	39.0		L = 0	ENDF-B-5
30.13	2.5	39.6489	5.489-1	39.0	0.1	L = 0	JENDL-1
30.13 ± 0.01				(39.0)		WGO= 0.1 ± 0.007	74SIMPSON+
30.12 ± 0.13			[a] 0.49 ± 0.2				76BELANOVA+
31.07	2.5	39.9122	8.082-1	39.0	0.12	L = 0	JENDL-2
31.07	2.5	39.808	0.808	39.0		L = 0	ENDF-B-5
31.07	2.5	39.9092	8.082-1	39.0	0.1	L = 0	JENDL-1
31.07 ± 0.01				(39.0)		WGO= 0.145± 0.01	74SIMPSON+
31.06 ± 0.13			[a] 0.7 ± 0.15				76BELANOVA+
31.49	2.5	39.278	1.739-1	39.0	0.12	L = 0	JENDL-2
31.49	2.5	39.174	0.174	39.0		L = 0	ENDF-B-5
31.49	2.5	39.274	1.739-1	39.0	0.1	L = 0	JENDL-1
31.49 ± 0.01				(39.0)		WGO= 0.031± 0.005	74SIMPSON+
31.49 ± 0.13			[a] 0.12 ± 0.05				76BELANOVA+
32.42	2.5	39.252	0.14804	39.0	0.12	L = 0	JENDL-2
32.42	2.5	39.148	0.148	39.0		L = 0	ENDF-B-5
32.42	2.5	39.248	0.14804	39.0	0.1	L = 0	JENDL-1
32.42 ± 0.01				(39.0)		WGO= 0.026± 0.005	74SIMPSON+
32.43 ± 0.14			[a] 0.88 ± 0.15				76BELANOVA+
33.2	2.5	40.0835	0.97953	39.0	0.12	L = 0	JENDL-2
33.2	2.5	39.98	0.98	39.0		L = 0	ENDF-B-5
33.2	2.5	40.0795	0.97953	39.0	0.1	L = 0	JENDL-1
33.2 ± 0.01				(39.0)		WGO= 0.17 ± 0.01	74SIMPSON+
33.19 ± 0.14			[a] 1.9 ± 0.2				76BELANOVA+
33.94	2.5	40.9683	1.86426	39.0	0.12	L = 0	JENDL-2
33.94	2.5	40.86	1.86	39.0		L = 0	ENDF-B-5
33.94	2.5	40.9643	1.86426	39.0	0.1	L = 0	JENDL-1
33.94 ± 0.01				(39.0)		WGO= 0.32 ± 0.015	74SIMPSON+
33.92 ± 0.14			[a] 0.8 ± 0.1				76BELANOVA+
34.99	2.5	40.1096	1.00559	39.0	0.12	L = 0	JENDL-2
34.99	2.5	40.01	1.01	39.0		L = 0	ENDF-B-5
34.99	2.5	40.1056	1.00559	39.0	0.1	L = 0	JENDL-1
34.99 ± 0.01				(39.0)		WGO= 0.17 ± 0.01	74SIMPSON+
36.67	2.5	39.9518	8.477-1	39.0	0.12	L = 0	JENDL-2
36.67	2.5	39.848	0.848	39.0		L = 0	ENDF-B-5
36.67	2.5	39.9478	8.477-1	39.0	0.1	L = 0	JENDL-1
36.67 ± 0.01				(39.0)		WGO= 0.14 ± 0.01	74SIMPSON+

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
37.03	2.5	41.1121	2.00813	39.0	0.12	L = 0	JENDL-2
37.03	2.5	41.01	2.01	39.0		L = 0	ENDF-B-5
37.03	2.5	41.1081	2.00813	39.0	0.1	L = 0	JENDL-1
37.03 ± 0.01				(39.0)		WGO= 0.33 ± 0.015	74SIMPSON+
37.55	2.5	39.1837	7.966-2	39.0	0.12	L = 0	JENDL-2
37.55	2.5	39.08	0.0797	39.0		L = 0	ENDF-B-5
37.55	2.5	39.1797	7.966-2	39.0	0.1	L = 0	JENDL-1
37.55 ± 0.01				(39.0)		WGO= 0.013± 0.005	74SIMPSON+
37.93	2.5	39.7199	6.158-1	39.0	0.12	L = 0	JENDL-2
37.93	2.5	39.616	0.616	39.0		L = 0	ENDF-B-5
37.93	2.5	39.7159	6.158-1	39.0	0.1	L = 0	JENDL-1
37.93 ± 0.01				(39.0)		WGO= 0.1 ± 0.008	74SIMPSON+
39.5	2.5	39.7451	0.64106	39.0	0.12	L = 0	JENDL-2
39.5	2.5	39.641	0.641	39.0		L = 0	ENDF-B-5
39.5	2.5	39.7411	0.64106	39.0	0.1	L = 0	JENDL-1
39.5 ± 0.01				(39.0)		WGO= 0.102± 0.01	74SIMPSON+
40.5	2.5	39.1994	9.545-2	39.0	0.12	L = 0	JENDL-2
40.5	2.5	39.095	0.0955	39.0		L = 0	ENDF-B-5
40.5	2.5	39.1955	9.545-2	39.0	0.1	L = 0	JENDL-1
40.5 ± 0.02				(39.0)		WGO= 0.015± 0.007	74SIMPSON+
40.95	2.5	39.424	3.199-1	39.0	0.12	L = 0	JENDL-2
40.95	2.5	39.32	0.32	39.0		L = 0	ENDF-B-5
40.95	2.5	39.42	3.199-1	39.0	0.1	L = 0	JENDL-1
40.95 ± 0.02				(39.0)		WGO= 0.05 ± 0.02	74SIMPSON+
41.26	2.5	40.196	1.09198	39.0	0.12	L = 0	JENDL-2
41.26	2.5	40.09	1.09	39.0		L = 0	ENDF-B-5
41.26	2.5	40.192	1.09198	39.0	0.1	L = 0	JENDL-1
41.26 ± 0.02				(39.0)		WGO= 0.17 ± 0.03	74SIMPSON+
41.54	2.5	41.6176	2.51361	39.0	0.12	L = 0	JENDL-2
41.54	2.5	41.51	2.51	39.0		L = 0	ENDF-B-5
41.54	2.5	41.6136	2.51361	39.0	0.1	L = 0	JENDL-1
41.54 ± 0.02				(39.0)		WGO= 0.39 ± 0.03	74SIMPSON+
42.95	2.5	41.9221	2.81806	39.0	0.12	L = 0	JENDL-2
42.95	2.5	41.82	2.82	39.0		L = 0	ENDF-B-5
42.95	2.5	41.9181	2.81806	39.0	0.1	L = 0	JENDL-1
42.95 ± 0.02				(39.0)		WGO= 0.43 ± 0.02	74SIMPSON+
44.11	2.5	39.5357	0.4317	39.0	0.12	L = 0	JENDL-2
44.11	2.5	39.432	0.432	39.0		L = 0	ENDF-B-5
44.11	2.5	39.5317	0.4317	39.0	0.1	L = 0	JENDL-1
44.11 ± 0.02				(39.0)		WGO= 0.065± 0.007	74SIMPSON+
45.35	2.5	40.2488	1.14482	39.0	0.12	L = 0	JENDL-2
45.35	2.5	40.14	1.14	39.0		L = 0	ENDF-B-5
45.35	2.5	40.2448	1.14482	39.0	0.1	L = 0	JENDL-1
45.35 ± 0.02				(39.0)		WGO= 0.17 ± 0.01	74SIMPSON+
47.11	2.5	39.5021	3.980-1	39.0	0.12	L = 0	JENDL-2
47.11	2.5	39.398	0.398	39.0		L = 0	ENDF-B-5
47.11	2.5	39.4981	3.980-1	39.0	0.1	L = 0	JENDL-1
47.11 ± 0.02				(39.0)		WGO= 0.058± 0.008	74SIMPSON+
48.55	2.5	39.5639	4.598-1	39.0	0.12	L = 0	JENDL-2
48.55	2.5	39.46	0.46	39.0		L = 0	ENDF-B-5
48.55	2.5	39.5599	4.598-1	39.0	0.1	L = 0	JENDL-1
48.55 ± 0.02				(39.0)		WGO= 0.066± 0.01	74SIMPSON+
49.29	2.5	39.8622	7.582-1	39.0	0.12	L = 0	JENDL-2
49.29	2.5	39.758	0.758	39.0		L = 0	ENDF-B-5
49.29	2.5	39.8582	7.582-1	39.0	0.1	L = 0	JENDL-1
49.29 ± 0.02				(39.0)		WGO= 0.108± 0.01	74SIMPSON+
50.2	2.5	39.2103	1.062-1	39.0	0.12	L = 0	JENDL-2
50.2	2.5	39.106	0.106	39.0		L = 0	ENDF-B-5
50.2	2.5	39.2063	1.062-1	39.0	0.1	L = 0	JENDL-1
50.2 ± 0.02				(39.0)		WGO= 0.015± 0.005	74SIMPSON+
51.28	2.5	40.1781	1.07415	39.0	0.12	L = 0	JENDL-2
51.28	2.5	40.07	1.07	39.0		L = 0	ENDF-B-5
51.28	2.5	40.1742	1.07415	39.0	0.1	L = 0	JENDL-1
51.28 ± 0.02				(39.0)		WGO= 0.15 ± 0.01	74SIMPSON+
52.17	2.5	39.2123	1.083-1	39.0	0.12	L = 0	JENDL-2
52.17	2.5	39.108	0.108	39.0		L = 0	ENDF-B-5
52.17	2.5	39.2083	1.083-1	39.0	0.1	L = 0	JENDL-1
52.17 ± 0.02				(39.0)		WGO= 0.015± 0.005	74SIMPSON+
53.03	2.5	41.2158	2.11183	39.0	0.12	L = 0	JENDL-2
53.03	2.5	41.11	2.11	39.0		L = 0	ENDF-B-5

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
53.03	2.5	41.2118	2.11183	39.0	0.1	L = 0	JENDL-1
53.03 ± 0.02				(39.0)		WGO= 0.29 ± 0.02	74SIMPSON+
53.6	2.5	39.1992	9.517-2	39.0	0.12	L = 0	JENDL-2
53.6	2.5	39.095	9.519-2	39.0		L = 0	ENDF-B-5
53.6	2.5	39.1952	9.517-2	39.0	0.1	L = 0	JENDL-1
53.6 ± 0.02				(39.0)		WGO= 0.013± 0.01	74SIMPSON+
54.02	2.5	39.7655	6.614-1	39.0	0.12	L = 0	JENDL-2
54.02	2.5	39.661	0.661	39.0		L = 0	ENDF-B-5
54.02	2.5	39.7615	6.614-1	39.0	0.1	L = 0	JENDL-1
54.02 ± 0.02				(39.0)		WGO= 0.09 ± 0.01	74SIMPSON+
54.55	2.5	41.0243	1.92031	39.0	0.12	L = 0	JENDL-2
54.55	2.5	40.92	1.92	39.0		L = 0	ENDF-B-5
54.55	2.5	41.0203	1.92031	39.0	0.1	L = 0	JENDL-1
54.55 ± 0.02				(39.0)		WGO= 0.26 ± 0.02	74SIMPSON+
54.93	2.5	39.2745	1.704-1	39.0	0.12	L = 0	JENDL-2
54.93	2.5	39.17	0.17	39.0		L = 0	ENDF-B-5
54.93	2.5	39.2705	1.704-1	39.0	0.1	L = 0	JENDL-1
54.93 ± 0.02				(39.0)		WGO= 0.023± 0.01	74SIMPSON+
55.87	2.5	40.7484	1.64442	39.0	0.12	L = 0	JENDL-2
55.87	2.5	40.64	1.64	39.0		L = 0	ENDF-B-5
55.87	2.5	40.7444	1.64442	39.0	0.1	L = 0	JENDL-1
55.87 ± 0.02				(39.0)		WGO= 0.22 ± 0.02	74SIMPSON+
58.74	2.5	39.5485	4.445-1	39.0	0.12	L = 0	JENDL-2
58.74	2.5	39.445	0.445	39.0		L = 0	ENDF-B-5
58.74	2.5	39.5445	4.445-1	39.0	0.1	L = 0	JENDL-1
58.74 ± 0.02				(39.0)		WGO= 0.058± 0.015	74SIMPSON+
59.13	2.5	40.0037	8.996-1	39.0	0.12	L = 0	JENDL-2
59.13	2.5	39.9	0.9	39.0		L = 0	ENDF-B-5
59.13	2.5	39.9997	8.996-1	39.0	0.1	L = 0	JENDL-1
59.13 ± 0.02				(39.0)		WGO= 0.117± 0.015	74SIMPSON+
59.98	2.5	39.8785	7.744-1	39.0	0.12	L = 0	JENDL-2
59.98	2.5	39.774	0.774	39.0		L = 0	ENDF-B-5
59.98	2.5	39.8745	7.744-1	39.0	0.1	L = 0	JENDL-1
59.98 ± 0.02				(39.0)		WGO= 0.1 ± 0.012	74SIMPSON+
60.76	2.5	40.3122	1.2082	39.0	0.12	L = 0	JENDL-2
60.76	2.5	40.21	1.21	39.0		L = 0	ENDF-B-5
60.76	2.5	40.4082	1.2082	39.0	0.2	L = 0	JENDL-1
60.76 ± 0.02				(39.0)		WGO= 0.155± 0.02	74SIMPSON+
61.2	2.5	41.9985	2.89453	39.0	0.12	L = 0	JENDL-2
61.2	2.5	41.89	2.89	39.0		L = 0	ENDF-B-5
61.2	2.5	42.0945	2.89453	39.0	0.2	L = 0	JENDL-1
61.2 ± 0.02				(39.0)		WGO= 0.37 ± 0.02	74SIMPSON+
62.51	2.5	39.3728	2.688-1	39.0	0.12	L = 0	JENDL-2
62.51	2.5	39.269	0.269	39.0		L = 0	ENDF-B-5
62.51	2.5	39.4688	2.688-1	39.0	0.2	L = 0	JENDL-1
62.51 ± 0.03				(39.0)		WGO= 0.034± 0.01	74SIMPSON+
63.19	2.5	39.5015	3.974-1	39.0	0.12	L = 0	JENDL-2
63.19	2.5	39.397	0.397	39.0		L = 0	ENDF-B-5
63.19	2.5	39.5975	3.974-1	39.0	0.2	L = 0	JENDL-1
63.19 ± 0.03				(39.0)		WGO= 0.05 ± 0.01	74SIMPSON+
64.82	2.5	39.5065	4.025-1	39.0	0.12	L = 0	JENDL-2
64.82	2.5	39.403	0.403	39.0		L = 0	ENDF-B-5
64.82	2.5	39.6026	4.025-1	39.0	0.2	L = 0	JENDL-1
64.82 ± 0.03				(39.0)		WGO= 0.05 ± 0.01	74SIMPSON+
66.21	2.5	40.4629	1.35887	39.0	0.12	L = 0	JENDL-2
66.21	2.5	40.36	1.36	39.0		L = 0	ENDF-B-5
66.21	2.5	40.5589	1.35887	39.0	0.2	L = 0	JENDL-1
66.21 ± 0.03				(39.0)		WGO= 0.167± 0.017	74SIMPSON+
67.36	2.5	40.2038	1.09978	39.0	0.12	L = 0	JENDL-2
67.36	2.5	40.1	1.1	39.0		L = 0	ENDF-B-5
67.36	2.5	40.2998	1.09978	39.0	0.2	L = 0	JENDL-1
67.36 ± 0.03				(39.0)		WGO= 0.134± 0.014	74SIMPSON+
68.01	2.5	40.341	1.23702	39.0	0.12	L = 0	JENDL-2
68.01	2.5	40.24	1.24	39.0		L = 0	ENDF-B-5
68.01	2.5	40.437	1.23702	39.0	0.2	L = 0	JENDL-1
68.01 ± 0.03				(39.0)		WGO= 0.15 ± 0.015	74SIMPSON+
68.67	2.5	40.7033	1.59934	39.0	0.12	L = 0	JENDL-2
68.67	2.5	40.6	1.6	39.0		L = 0	ENDF-B-5
68.67	2.5	40.7993	1.59934	39.0	0.2	L = 0	JENDL-1
68.67 ± 0.03				(39.0)		WGO= 0.193± 0.015	74SIMPSON+

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
69.66	2.5	43.0351	3.93109	39.0	0.12	L = 0	JENDL-2
69.66	2.5	42.93	3.93	39.0		L = 0	ENDF-B-5
69.66	2.5	43.1311	3.93109	39.0	0.2	L = 0	JENDL-1
69.66 ± 0.03				(39.0)		WGO= 0.471± 0.02	74SIMPSON+
70.27	2.5	41.5266	2.42261	39.0	0.12	L = 0	JENDL-2
70.27	2.5	41.42	2.42	39.0		L = 0	ENDF-B-5
70.27	2.5	41.6226	2.42261	39.0	0.2	L = 0	JENDL-1
70.27 ± 0.03				(39.0)		WGO= 0.289± 0.02	74SIMPSON+
71.6	2.5	39.3578	0.25385	39.0	0.12	L = 0	JENDL-2
71.6	2.5	39.254	0.254	39.0		L = 0	ENDF-B-5
71.6	2.5	39.4539	0.25385	39.0	0.2	L = 0	JENDL-1
71.6 ± 0.03				(39.0)		WGO= 0.03 ± 0.015	74SIMPSON+
72.22	2.5	41.7299	2.62595	39.0	0.12	L = 0	JENDL-2
72.22	2.5	41.63	2.63	39.0		L = 0	ENDF-B-5
72.22	2.5	41.826	2.62595	39.0	0.?	L = 0	JENDL-1
72.22 ± 0.03				(39.0)		WGO= 0.309± 0.02	74SIMPSON+
72.88	2.5	42.1005	2.99648	39.0	0.12	L = 0	JENDL-2
72.88	2.5	42.0	3.0	39.0		L = 0	ENDF-B-5
72.88	2.5	42.1965	2.99648	39.0	0.2	L = 0	JENDL-1
72.88 ± 0.03				(39.0)		WGO= 0.351± 0.02	74SIMPSON+
73.93	2.5	39.4651	3.611-1	39.0	0.12	L = 0	JENDL-2
73.93	2.5	39.361	0.361	39.0		L = 0	ENDF-B-5
73.93	2.5	39.5611	3.611-1	39.0	0.2	L = 0	JENDL-1
73.93 ± 0.03				(39.0)		WGO= 0.042± 0.015	74SIMPSON+
74.34	2.5	39.4661	3.621-1	39.0	0.12	L = 0	JENDL-2
74.34	2.5	39.362	0.362	39.0		L = 0	ENDF-B-5
74.34	2.5	39.5621	3.621-1	39.0	0.2	L = 0	JENDL-1
74.34 ± 0.03				(39.0)		WGO= 0.042± 0.015	74SIMPSON+
74.88	2.5	39.4155	0.31152	39.0	0.12	L = 0	JENDL-2
74.88	2.5	39.312	0.312	39.0		L = 0	ENDF-B-5
74.88	2.5	39.5115	0.31152	39.0	0.2	L = 0	JENDL-1
74.88 ± 0.03				(39.0)		WGO= 0.036± 0.015	74SIMPSON+
75.43	2.5	42.2306	3.12662	39.0	0.12	L = 0	JENDL-2
75.43	2.5	42.13	3.13	39.0		L = 0	ENDF-B-5
75.43	2.5	42.3266	3.12662	39.0	0.2	L = 0	JENDL-1
75.43 ± 0.03				(39.0)		WGO= 0.36 ± 0.02	74SIMPSON+
76.5	2.5	39.3139	2.099-1	39.0	0.12	L = 0	JENDL-2
76.5	2.5	39.21	0.21	39.0		L = 0	ENDF-B-5
76.5	2.5	39.4099	2.099-1	39.0	0.2	L = 0	JENDL-1
76.5 ± 0.03				(39.0)		WGO= 0.024± 0.01	74SIMPSON+
77.0	2.5	39.5305	5.264-1	39.0	0.12	L = 0	JENDL-2
77.0	2.5	39.526	0.526	39.0		L = 0	ENDF-B-5
77.0	2.5	39.7255	5.264-1	39.0	0.2	L = 0	JENDL-1
77.0 ± 0.03				(39.0)		WGO= 0.06 ± 0.02	74SIMPSON+
77.54	2.5	40.601	1.49697	39.0	0.12	L = 0	JENDL-2
77.54	2.5	40.5	1.5	39.0		L = 0	ENDF-B-5
77.54	2.5	40.697	1.49697	39.0	0.2	L = 0	JENDL-1
77.54 ± 0.03				(39.0)		WGO= 0.17 ± 0.02	74SIMPSON+
78.22	2.5	39.4135	3.095-1	39.0	0.12	L = 0	JENDL-2
78.22	2.5	39.31	0.31	39.0		L = 0	ENDF-B-5
78.22	2.5	39.5095	3.095-1	39.0	0.2	L = 0	JENDL-1
78.22 ± 0.03				(39.0)		WGO= 0.035± 0.01	74SIMPSON+
80.5	2.5	40.0461	9.420-1	39.0	0.12	L = 0	JENDL-2
80.5	2.5	39.942	0.942	39.0		L = 0	ENDF-B-5
80.5	2.5	40.1421	3.420-1	39.0	0.2	L = 0	JENDL-1
80.5 ± 0.03				(39.0)		WGO= 0.105± 0.03	74SIMPSON+
81.0	2.5	41.48	2.376	39.0	0.12	L = 0	JENDL-2
81.0	2.5	41.38	2.38	39.0		L = 0	ENDF-B-5
81.0	2.5	41.576	2.376	39.0	0.2	L = 0	JENDL-1
81.0 ± 0.03				(39.0)		WGO= 0.264± 0.03	74SIMPSON+
81.1	2.5	40.8151	1.71106	39.0	0.12	L = 0	JENDL-2
81.1	2.5	40.71	1.71	39.0		L = 0	ENDF-B-5
81.1	2.5	40.9111	1.71106	39.0	0.2	L = 0	JENDL-1
81.1 ± 0.03				(39.0)		WGO= 0.19 ± 0.04	74SIMPSON+
83.1	2.5	40.1432	1.03921	39.0	0.12	L = 0	JENDL-2
83.1	2.5	40.04	1.04	39.0		L = 0	ENDF-B-5
83.1	2.5	40.2392	1.03921	39.0	0.2	L = 0	JENDL-1
83.1 ± 0.03				(39.0)		WGO= 0.114± 0.03	74SIMPSON+
83.52	2.5	41.6172	2.51321	39.0	0.12	L = 0	JENDL-2
83.52	2.5	41.51	2.51	39.0		L = 0	ENDF-B-5

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
83.52	2.5	41.7132	2.51321	39.0	0.2	L = 0	JENDL-1
83.52 ± 0.03				(39.0)		WGO= 0.275± 0.02	74SIMPSON+
84.19	2.5	41.3061	2.20212	39.0	0.12	L = 0	JENDL-2
84.19	2.5	41.2	2.2	39.0		L = 0	ENDF-B-5
84.19	2.5	41.4021	2.20212	39.0	0.2	L = 0	JENDL-1
84.19 ± 0.03				(39.0)		WGO= 0.24 ± 0.02	74SIMPSON+
85.56	2.5	45.9119	6.8079	39.0	0.12	L = 0	JENDL-2
85.56	2.5	45.81	6.81	39.0		L = 0	ENDF-B-5
85.56	2.5	46.0079	6.8079	39.0	0.2	L = 0	JENDL-1
85.56 ± 0.04				(39.0)		WGO= 0.736± 0.04	74SIMPSON+
86.63	2.5	40.6863	1.58228	39.0	0.12	L = 0	JENDL-2
86.63	2.5	40.58	1.58	39.0		L = 0	ENDF-B-5
86.63	2.5	40.7823	1.58228	39.0	0.2	L = 0	JENDL-1
86.63 ± 0.04				(39.0)		WGO= 0.17 ± 0.02	74SIMPSON+
88.36	2.5	40.5516	1.4476	39.0	0.12	L = 0	JENDL-2
88.36	2.5	40.45	1.45	39.0		L = 0	ENDF-B-5
88.36	2.5	40.6476	1.4476	39.0	0.2	L = 0	JENDL-1
88.36 ± 0.04				(39.0)		WGO= 0.154± 0.02	74SIMPSON+
89.0	2.5	40.387	1.28302	39.0	0.12	L = 0	JENDL-2
89.0	2.5	40.28	1.28	39.0		L = 0	ENDF-B-5
89.0	2.5	40.483	1.28302	39.0	0.2	L = 0	JENDL-1
89.0 ± 0.04				(39.0)		WGO= 0.136± 0.02	74SIMPSON+
90.43	2.5	40.5304	1.42642	39.0	0.12	L = 0	JENDL-2
90.43	2.5	40.43	1.43	39.0		L = 0	ENDF-B-5
90.43	2.5	40.6264	1.42642	39.0	0.2	L = 0	JENDL-1
90.43 ± 0.04				(39.0)		WGO= 0.15 ± 0.02	74SIMPSON+
91.25	2.5	40.2503	1.1463	39.0	0.12	L = 0	JENDL-2
91.25	2.5	40.15	1.15	39.0		L = 0	ENDF B-5
91.25	2.5	40.3463	1.1463	39.0	0.2	L = 0	JENDL-1
91.25 ± 0.04				(39.0)		WGO= 0.12 ± 0.02	74SIMPSON+
94.72	2.5	40.4665	1.36254	39.0	0.12	L = 0	JENDL-2
94.72	2.5	40.36	1.36	39.0		L = 0	ENDF-B-5
94.72	2.5	40.5625	1.36254	39.0	0.2	L = 0	JENDL-1
94.72 ± 0.04				(39.0)		WGO= 0.14 ± 0.02	74SIMPSON+
95.8	2.5	39.4955	0.39151	39.0	0.12	L = 0	JENDL-2
95.8	2.5	39.392	0.392	39.0		L = 0	ENDF-B-5
95.8	2.5	39.5915	0.39151	39.0	0.2	L = 0	JENDL-1
95.8 ± 0.04				(39.0)		WGO= 0.04 ± 0.015	74SIMPSON+
97.53	2.5	41.2767	2.17266	39.0	0.12	L = 0	JENDL-2
97.53	2.5	41.17	2.17	39.0		L = 0	ENDF-B-5
97.53	2.5	41.3727	2.17266	39.0	0.2	L = 0	JENDL-1
97.53 ± 0.04				(39.0)		WGO= 0.22 ± 0.02	74SIMPSON+
99.48	2.5	40.1014	9.973-1	39.0	0.12	L = 0	JENDL-2
99.48	2.5	39.997	0.997	39.0		L = 0	ENDF-B-5
99.48	2.5	40.1974	9.973-1	39.0	0.2	L = 0	JENDL-1
99.48 ± 0.04				(39.0)		WGO= 0.1 ± 0.02	74SIMPSON+
101.12	2.5	42.8247	3.72066	39.0	0.12	L = 0	JENDL-2
101.12	2.5	42.72	3.72	39.0		L = 0	ENDF-B-5
101.12	2.5	42.9207	3.72066	39.0	0.2	L = 0	JENDL-1
101.12 ± 0.04				(39.0)		WGO= 0.37 ± 0.04	74SIMPSON+
101.92	2.5	41.6279	2.52389	39.0	0.12	L = 0	JENDL-2
101.92	2.5	41.52	2.52	39.0		L = 0	ENDF-B-5
101.92	2.5	41.7239	2.52389	39.0	0.2	L = 0	JENDL-1
101.92 ± 0.04				(39.0)		WGO= 0.25 ± 0.04	74SIMPSON+
104.06	2.5	39.8283	0.72427	39.0	0.12	L = 0	JENDL-2
104.06	2.5	39.724	0.724	39.0		L = 0	ENDF-B-5
104.06	2.5	39.9243	0.72427	39.0	0.2	L = 0	JENDL-1
104.06 ± 0.04				(39.0)		WGO= 0.071± 0.02	74SIMPSON+
104.96	2.5	41.0505	1.94655	39.0	0.12	L = 0	JENDL-2
104.96	2.5	40.95	1.95	39.0		L = 0	ENDF-B-5
104.96	2.5	41.1465	1.94655	39.0	0.2	L = 0	JENDL-1
104.96 ± 0.04				(39.0)		WGO= 0.19 ± 0.03	74SIMPSON+
107.17	2.5	42.7791	3.67506	39.0	0.12	L = 0	JENDL-2
107.17	2.5	42.68	3.68	39.0		L = 0	ENDF-B-5
107.17	2.5	42.8751	3.67506	39.0	0.2	L = 0	JENDL-1
107.17 ± 0.04				(39.0)		WGO= 0.355± 0.05	74SIMPSON+
109.72	2.5	40.3819	1.27792	39.0	0.12	L = 0	JENDL-2
109.72	2.5	40.28	1.28	39.0		L = 0	ENDF-B-5
109.72	2.5	40.4779	1.27792	39.0	0.2	L = 0	JENDL-1
109.72 ± 0.04				(39.0)		WGO= 0.122± 0.03	74SIMPSON+

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
111.63	2.5	40.4986	1.39465	39.0	0.12	L = 0	JENDL-2
111.63	2.5	40.39	1.39	39.0		L = 0	ENDF-B-5
111.63	2.5	40.5946	1.39465	39.0	0.2	L = 0	JENDL-1
111.63 ± 0.04				(39.0)		WGO= 0.132± 0.03	74SIMPSON+
112.12	2.5	40.1523	1.04828	39.0	0.12	L = 0	JENDL-2
112.12	2.5	40.05	1.05	39.0		L = 0	ENDF-B-5
112.12	2.5	40.2483	1.04828	39.0	0.2	L = 0	JENDL-1
112.12 ± 0.04				(39.0)		WGO= 0.099± 0.03	74SIMPSON+
112.7	2.5	40.3248	1.22084	39.0	0.12	L = 0	JENDL-2
112.7	2.5	40.22	1.22	39.0		L = 0	ENDF-B-5
112.7	2.5	40.4208	1.22084	39.0	0.2	L = 0	JENDL-1
112.7 ± 0.04				(39.0)		WGO= 0.115± 0.03	74SIMPSON+
113.19	2.5	49.4558	10.3518	39.0	0.12	L = 0	JENDL-2
113.19	2.5	49.4	10.4	39.0		L = 0	ENDF-B-5
113.19	2.5	49.5518	10.3518	39.0	0.2	L = 0	JENDL-1
113.19 ± 0.04				(39.0)		WGO= 0.973± 0.07	74SIMPSON+
114.24	2.5	44.523	5.41897	39.0	0.12	L = 0	JENDL-2
114.24	2.5	44.42	5.42	39.0		L = 0	ENDF-B-5
114.24	2.5	44.619	5.41897	39.0	0.2	L = 0	JENDL-1
114.24 ± 0.04				(39.0)		WGO= 0.507± 0.05	74SIMPSON+
116.6	2.5	46.4791	7.37513	39.0	0.12	L = 0	JENDL-2
116.6	2.5	46.38	7.38	39.0		L = 0	ENDF-B-5
116.6	2.5	46.5751	7.37513	39.0	0.2	L = 0	JENDL-1
116.6 ± 0.04				(39.0)		WGO= 0.683± 0.07	74SIMPSON+
119.74	2.5	43.8312	4.72719	39.0	0.12	L = 0	JENDL-2
119.74	2.5	43.73	4.73	39.0		L = 0	ENDF-B-5
119.74	2.5	43.9272	4.72719	39.0	0.2	L = 0	JENDL-1
119.74 ± 0.04				(39.0)		WGO= 0.432± 0.05	74SIMPSON+
122.31	2.5	46.182	7.07801	39.0	0.12	L = 0	JENDL-2
122.31	2.5	46.08	7.08	39.0		L = 0	ENDF-B-5
122.31	2.5	46.278	7.07801	39.0	0.2	L = 0	JENDL-1
122.31 ± 0.04				(39.0)		WGO= 0.64 ± 0.06	74SIMPSON+
123.37	2.5	57.653	18.549	39.0	0.12	L = 0	JENDL-2
123.37	2.5	57.5	18.5	39.0		L = 0	ENDF-B-5
123.37	2.5	57.749	18.549	39.0	0.2	L = 0	JENDL-1
123.37 ± 0.06				(39.0)		WGO= 1.67 ± 0.12	74SIMPSON+
125.18	2.5	47.0254	7.92138	39.0	0.12	L = 0	JENDL-2
125.18	2.5	46.92	7.92	39.0		L = 0	ENDF-B-5
125.18	2.5	47.1214	7.92138	39.0	0.2	L = 0	JENDL-1
125.18 ± 0.06				(39.0)		WGO= 0.708± 0.07	74SIMPSON+
126.4	2.5	39.8348	0.73078	39.0	0.12	L = 0	JENDL-2
126.4	2.5	39.731	0.731	39.0		L = 0	ENDF-B-5
126.4	2.5	39.9308	0.73078	39.0	0.2	L = 0	JENDL-1
126.4 ± 0.06				(39.0)		WGO= 0.065± 0.025	74SIMPSON+
127.38	2.5	41.4741	2.37012	39.0	0.12	L = 0	JENDL-2
127.38	2.5	41.37	2.37	39.0		L = 0	ENDF-B-5
127.38	2.5	41.5701	2.37012	39.0	0.2	L = 0	JENDL-1
127.38 ± 0.06				(39.0)		WGO= 0.21 ± 0.03	74SIMPSON+
130.3	2.5	39.6519	5.479-1	39.0	0.12	L = 0	JENDL-2
130.3	2.5	39.548	0.548	39.0		L = 0	ENDF-B-5
130.3	2.5	39.7479	5.479-1	39.0	0.2	L = 0	JENDL-1
130.3 ± 0.06				(39.0)		WGO= 0.048± 0.015	74SIMPSON+
132.5	2.5	39.9673	8.633-1	39.0	0.12	L = 0	JENDL-2
132.5	2.5	39.863	0.863	39.0		L = 0	ENDF-B-5
132.5	2.5	40.0633	8.633-1	39.0	0.2	L = 0	JENDL-1
132.5 ± 0.06				(39.0)		WGO= 0.075± 0.02	74SIMPSON+
133.5	2.5	40.1208	1.01677	39.0	0.12	L = 0	JENDL-2
133.5	2.5	40.02	1.02	39.0		L = 0	ENDF-B-5
133.5	2.5	40.2168	1.01677	39.0	0.2	L = 0	JENDL-1
133.5 ± 0.06				(39.0)		WGO= 0.088± 0.03	74SIMPSON+
134.1	2.5	40.5515	1.44752	39.0	0.12	L = 0	JENDL-2
134.1	2.5	40.45	1.45	39.0		L = 0	ENDF-B-5
134.1	2.5	40.6475	1.44752	39.0	0.2	L = 0	JENDL-1
134.1 ± 0.06				(39.0)		WGO= 0.125± 0.03	74SIMPSON+
134.7	2.5	39.8584	7.543-1	39.0	0.12	L = 0	JENDL-2
134.7	2.5	39.754	0.754	39.0		L = 0	ENDF-B-5
134.7	2.5	39.9544	7.543-1	39.0	0.2	L = 0	JENDL-1
134.7 ± 0.06				(39.0)		WGO= 0.065± 0.03	74SIMPSON+
135.2	2.5	39.8365	7.325-1	39.0	0.12	L = 0	JENDL-2
135.2	2.5	39.733	0.733	39.0		L = 0	ENDF-B-5

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
135.2	2.5	39.9325	7.325-1	39.0	0.2	L = 0	JENDL-1
135.2 ± 0.06				(39.0)		WGO= 0.063± 0.03	74SIMPSON+
139.4	2.5	41.548	2.444	39.0	0.12	L = 0	JENDL-2
139.4	2.5	41.44	2.44	39.0		L = 0	ENDF-B-5
139.4	2.5	41.644	2.444	39.0	0.2	L = 0	JENDL-1
139.4 ± 0.06				(39.0)		WGO= 0.207± 0.07	74SIMPSON+
140.03	2.5	46.0265	6.92255	39.0	0.12	L = 0	JENDL-2
140.03	2.5	45.92	6.92	39.0		L = 0	ENDF-B-5
140.03	2.5	46.1226	6.92255	39.0	0.2	L = 0	JENDL-1
140.03 ± 0.06				(39.0)		WGO= 0.585± 0.08	74SIMPSON+
141.2	2.5	40.3636	1.25957	39.0	0.12	L = 0	JENDL-2
141.2	2.5	40.26	1.26	39.0		L = 0	ENDF-B-5
141.2	2.5	40.4596	1.25957	39.0	0.2	L = 0	JENDL-1
141.2 ± 0.06				(39.0)		WGO= 0.106± 0.02	74SIMPSON+
144.0	2.5	42.908	3.804	39.0	0.12	L = 0	JENDL-2
144.0	2.5	42.8	3.8	39.0		L = 0	ENDF-B-5
144.0	2.5	43.004	3.804	39.0	0.2	L = 0	JENDL-1
144.0 ± 0.06				(39.0)		WGO= 0.317± 0.03	74SIMPSON+
144.47	2.5	45.5585	6.45451	39.0	0.12	L = 0	JENDL-2
144.47	2.5	45.45	6.45	39.0		L = 0	ENDF-B-5
144.47	2.5	45.6545	6.45451	39.0	0.2	L = 0	JENDL-1
144.47 ± 0.06				(39.0)		WGO= 0.537± 0.04	74SIMPSON+
145.0	2.5	42.7165	3.61248	39.0	0.12	L = 0	JENDL-2
145.0	2.5	42.61	3.61	39.0		L = 0	ENDF-B-5
145.0	2.5	42.8125	3.61248	39.0	0.2	L = 0	JENDL-1
145.0 ± 0.06				(39.0)		WGO= 0.3 ± 0.04	74SIMPSON+
146.09	2.5	48.1086	9.00464	39.0	0.12	L = 0	JENDL-2
146.09	2.5	48.0	9.0	39.0		L = 0	ENDF-B-5
146.09	2.5	48.2046	9.00464	39.0	0.2	L = 0	JENDL-1
146.09 ± 0.06				(39.0)		WGO= 0.745± 0.06	74SIMPSON+
146.6	2.5	43.1722	4.06824	39.0	0.12	L = 0	JENDL-2
146.6	2.5	43.07	4.07	39.0		L = 0	ENDF-B-5
146.6	2.5	43.2682	4.06824	39.0	0.2	L = 0	JENDL-1
146.6 ± 0.06				(39.0)		WGO= 0.336± 0.05	74SIMPSON+
148.38	2.5	43.611	4.50702	39.0	0.12	L = 0	JENDL-2
148.38	2.5	43.51	4.51	39.0		L = 0	ENDF-B-5
148.38	2.5	43.707	4.50702	39.0	0.2	L = 0	JENDL-1
148.38 ± 0.06				(39.0)		WGO= 0.37 ± 0.05	74SIMPSON+
149.8	2.5	39.8384	7.343-1	39.0	0.12	L = 0	JENDL-2
149.8	2.5	39.734	0.734	39.0		L = 0	ENDF-B-5
149.8	2.5	39.9344	7.343-1	39.0	0.2	L = 0	JENDL-1
149.8 ± 0.06				(39.0)		WGO= 0.06 ± 0.02	74SIMPSON+
151.1	2.5	40.0874	9.833-1	39.0	0.12	L = 0	JENDL-2
151.1	2.5	39.983	0.983	39.0		L = 0	ENDF-B-5
151.1	2.5	40.1834	9.833-1	39.0	0.2	L = 0	JENDL-1
151.1 ± 0.06				(39.0)		WGO= 0.08 ± 0.02	74SIMPSON+
152.8	2.5	41.1559	2.05196	39.0	0.12	L = 0	JENDL-2
152.8	2.5	41.05	2.05	39.0		L = 0	ENDF-B-5
152.8	2.5	41.252	2.05196	39.0	0.2	L = 0	JENDL-1
152.8 ± 0.06				(39.0)		WGO= 0.166± 0.04	74SIMPSON+
154.0	2.5	43.013	3.90905	39.0	0.12	L = 0	JENDL-2
154.0	2.5	42.91	3.91	39.0		L = 0	ENDF-B-5
154.0	2.5	43.109	3.90905	39.0	0.2	L = 0	JENDL-1
154.0 ± 0.06				(39.0)		WGO= 0.315± 0.06	74SIMPSON+
154.7	2.5	43.2334	4.12936	39.0	0.12	L = 0	JENDL-2
154.7	2.5	43.13	4.13	39.0		L = 0	ENDF-B-5
154.7	2.5	43.3294	4.12936	39.0	0.2	L = 0	JENDL-1
154.7 ± 0.06				(39.0)		WGO= 0.332± 0.06	74SIMPSON+
158.64	2.5	43.5753	4.47131	39.0	0.12	L = 0	JENDL-2
158.64	2.5	43.47	4.47	39.0		L = 0	ENDF-B-5
158.64	2.5	43.6713	4.47131	39.0	0.2	L = 0	JENDL-1
158.64 ± 0.06				(39.0)		WGO= 0.355± 0.04	74SIMPSON+
160.64	2.5	54.2372	15.1332	39.0	0.12	L = 0	JENDL-2
160.64	2.5	54.1	15.1	39.0		L = 0	ENDF-B-5
160.64	2.5	54.3332	15.1332	39.0	0.2	L = 0	JENDL-1
160.64 ± 0.08				(39.0)		WGO= 1.194± 0.12	74SIMPSON+
163.9	2.5	39.6417	5.376-1	39.0	0.12	L = 0	JENDL-2
163.9	2.5	39.538	0.538	39.0		L = 0	ENDF-B-5
163.9	2.5	39.7377	5.376-1	39.0	0.2	L = 0	JENDL-1
163.9 ± 0.06				(39.0)		WGO= 0.042± 0.02	74SIMPSON+

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
164.87	2.5	44.0603	4.95531	39.0	0.12	L = 0	JENDL-2
164.87	2.5	43.96	4.96	39.0		L = 0	ENDF-B-5
164.87	2.5	44.1563	4.95631	39.0	0.2	L = 0	JENDL-1
164.87 ± 0.08				(39.0)		WGO= 0.386± 0.05	74SIMPSON+
166.1	2.5	41.5527	2.44872	39.0	0.12	L = 0	JENDL-2
166.1	2.5	41.45	2.45	39.0		L = 0	ENDF-B-5
166.1	2.5	41.6487	2.44872	39.0	0.2	L = 0	JENDL-1
166.1 ± 0.08				(39.0)		WGO= 0.19 ± 0.04	74SIMPSON+
166.8	2.5	41.39	2.28597	39.0	0.12	L = 0	JENDL-2
166.8	2.5	41.29	2.29	39.0		L = 0	ENDF-B-5
166.8	2.5	41.486	2.28597	39.0	0.2	L = 0	JENDL-1
166.8 ± 0.08				(39.0)		WGO= 0.177± 0.04	74SIMPSON+
168.01	2.5	45.6238	6.51982	39.0	0.12	L = 0	JENDL-2
168.01	2.5	45.52	6.52	39.0		L = 0	ENDF-B-5
168.01	2.5	45.7198	6.51982	39.0	0.2	L = 0	JENDL-1
168.01 ± 0.08				(39.0)		WGO= 0.503± 0.07	74SIMPSON+
169.7	2.5	40.3546	1.25058	39.0	0.12	L = 0	JENDL-2
169.7	2.5	40.25	1.25	39.0		L = 0	ENDF-B-5
169.7	2.5	40.4506	1.25058	39.0	0.2	L = 0	JENDL-1
169.7 ± 0.08				(39.0)		WGO= 0.096± 0.02	74SIMPSON+
171.7	2.5	40.3619	1.25793	39.0	0.12	L = 0	JENDL-2
171.7	2.5	40.26	1.26	39.0		L = 0	ENDF-B-5
171.7	2.5	40.4579	1.25793	39.0	0.2	L = 0	JENDL-1
171.7 ± 0.08				(39.0)		WGO= 0.096± 0.02	74SIMPSON+
172.7	2.5	46.5815	7.47753	39.0	0.12	L = 0	JENDL-2
172.7	2.5	46.48	7.48	39.0		L = 0	ENDF-B-5
172.7	2.5	46.6775	7.47753	39.0	0.2	L = 0	JENDL-1
172.7 ± 0.08				(39.0)		WGO= 0.569± 0.07	74SIMPSON+
173.6	2.5	46.5483	7.44429	39.0	0.12	L = 0	JENDL-2
173.6	2.5	46.44	7.44	39.0		L = 0	ENDF-B-5
173.6	2.5	46.6443	7.44429	39.0	0.2	L = 0	JENDL-1
173.6 ± 0.08				(39.0)		WGO= 0.565± 0.07	74SIMPSON+
174.7	2.5	43.0692	3.96522	39.0	0.12	L = 0	JENDL-2
174.7	2.5	42.97	3.97	39.0		L = 0	ENDF-B-5
174.7	2.5	43.1652	3.96522	39.0	0.2	L = 0	JENDL-1
174.7 ± 0.08				(39.0)		WGO= 0.3 ± 0.05	74SIMPSON+
175.8	2.5	43.0949	3.99095	39.0	0.12	L = 0	JENDL-2
175.8	2.5	42.99	3.99	39.0		L = 0	ENDF-B-5
175.8	2.5	43.1909	3.99095	39.0	0.2	L = 0	JENDL-1
175.8 ± 0.08				(39.0)		WGO= 0.301± 0.05	74SIMPSON+
177.0	2.5	47.7118	8.60777	39.0	0.12	L = 0	JENDL-2
177.0	2.5	47.61	8.61	39.0		L = 0	ENDF-B-5
177.0	2.5	47.8078	8.60777	39.0	0.2	L = 0	JENDL-1
177.0 ± 0.08				(39.0)		WGO= 0.647± 0.07	74SIMPSON+
180.0	2.5	42.0556	2.95161	39.0	0.12	L = 0	JENDL-2
180.0	2.5	41.95	2.95	39.0		L = 0	ENDF-B-5
180.0	2.5	42.1516	2.95161	39.0	0.2	L = 0	JENDL-1
180.0 ± 0.08				(39.0)		WGO= 0.22 ± 0.04	74SIMPSON+
180.5	2.5	41.0252	1.92121	39.0	0.12	L = 0	JENDL-2
180.5	2.5	40.92	1.92	39.0		L = 0	ENDF-B-5
180.5	2.5	41.1212	1.92121	39.0	0.2	L = 0	JENDL-1
180.5 ± 0.08				(39.0)		WGO= 0.143± 0.04	74SIMPSON+
181.5	2.5	41.3	2.19597	39.0	0.12	L = 0	JENDL-2
181.5	2.5	41.2	2.2	39.0		L = 0	ENDF-B-5
181.5	2.5	41.396	2.19597	39.0	0.2	L = 0	JENDL-1
181.5 ± 0.08				(39.0)		WGO= 0.163± 0.04	74SIMPSON+
183.0	2.5	40.9844	1.88036	39.0	0.12	L = 0	JENDL-2
183.0	2.5	40.98	1.88	39.0		L = 0	ENDF-B-5
183.0	2.5	41.0804	1.88036	39.0	0.2	L = 0	JENDL-1
183.0 ± 0.08				(39.0)		WGO= 0.139± 0.04	74SIMPSON+
184.05	2.5	42.4413	3.33736	39.0	0.12	L = 0	JENDL-2
184.05	2.5	42.34	3.34	39.0		L = 0	ENDF-B-5
184.05	2.5	42.5374	3.33736	39.0	0.2	L = 0	JENDL-1
184.05 ± 0.08				(39.0)		WGO= 0.246± 0.04	74SIMPSON+
184.5	2.5	43.7087	4.6047	39.0	0.12	L = 0	JENDL-2
184.5	2.5	43.6	4.6	39.0		L = 0	ENDF-B-5
184.5	2.5	43.8047	4.6047	39.0	0.2	L = 0	JENDL-1
184.5 ± 0.08				(39.0)		WGO= 0.339± 0.04	74SIMPSON+
186.2	2.5	41.1508	2.04683	39.0	0.12	L = 0	JENDL-2
186.2	2.5	41.05	2.05	39.0		L = 0	ENDF-B-5

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
186.2	2.5	41.2468	2.04683	39.0	0.2	L = 0	JENDL-1
186.2 ± 0.08				(39.0)		WGO= 0.15 ± 0.03	74SIMPSON+
186.9	2.5	43.8889	4.7849	39.0	0.12	L = 0	JENDL-2
186.9	2.5	43.78	4.78	39.0		L = 0	ENDF-B-5
186.9	2.5	43.9849	4.7849	39.0	0.2	L = 0	JENDL-1
186.9 ± 0.08				(39.0)		WGO= 0.35 ± 0.04	74SIMPSON+
188.0	2.5	47.6736	8.56957	39.0	0.12	L = 0	JENDL-2
188.0	2.5	47.57	8.57	39.0		L = 0	ENDF-B-5
188.0	2.5	47.7696	8.56957	39.0	0.2	L = 0	JENDL-1
188.0 ± 0.08				(39.0)		WGO= 0.625± 0.07	74SIMPSON+
190.6	2.5	42.086	2.98205	39.0	0.12	L = 0	JENDL-2
190.6	2.5	41.98	2.98	39.0		L = 0	ENDF-B-5
190.6	2.5	42.1821	2.98205	39.0	0.2	L = 0	JENDL-1
190.6 ± 0.08				(39.0)		WGO= 0.216± 0.04	74SIMPSON+
191.6	2.5	42.2876	3.18365	39.0	0.12	L = 0	JENDL-2
191.6	2.5	42.18	3.18	39.0		L = 0	ENDF-B-5
191.6	2.5	42.3837	3.18365	39.0	0.2	L = 0	JENDL-1
191.6 ± 0.08				(39.0)		WGO= 0.23 ± 0.04	74SIMPSON+
192.25	2.5	43.7905	4.68651	39.0	0.12	L = 0	JENDL-2
192.25	2.5	43.69	4.69	39.0		L = 0	ENDF-B-5
192.25	2.5	43.8865	4.68651	39.0	0.2	L = 0	JENDL-1
192.25 ± 0.08				(39.0)		WGO= 0.338± 0.04	74SIMPSON+
193.35	2.5	47.8781	8.77408	39.0	0.12	L = 0	JENDL-2
193.35	2.5	47.77	8.77	39.0		L = 0	ENDF-B-5
193.35	2.5	47.9741	8.77408	39.0	0.2	L = 0	JENDL-1
193.35 ± 0.1				(39.0)		WGO= 0.631± 0.07	74SIMPSON+
195.9	2.5	39.244	1.399-1	39.0	0.12	L = 0	JENDL-2
195.9	2.5	39.14	0.14	39.0		L = 0	ENDF-B-5
195.9	2.5	39.34	1.399-1	39.0	0.2	L = 0	JENDL-1
195.9 ± 0.1				(39.0)		WGO= 0.01 ± 0.003	74SIMPSON+
196.2	2.5	40.5187	1.41472	39.0	0.12	L = 0	JENDL-2
196.2	2.5	40.41	1.41	39.0		L = 0	ENDF-B-5
196.2	2.5	40.6147	1.41472	39.0	0.2	L = 0	JENDL-1
196.2 ± 0.1				(39.0)		WGO= 0.101± 0.02	74SIMPSON+
196.9	2.5	41.4053	2.30127	39.0	0.12	L = 0	JENDL-2
196.9	2.5	41.3	2.3	39.0		L = 0	ENDF-B-5
196.9	2.5	41.5013	2.30127	39.0	0.2	L = 0	JENDL-1
196.9 ± 0.1				(39.0)		WGO= 0.164± 0.02	74SIMPSON+
197.6	2.5	44.6846	5.58064	39.0	0.12	L = 0	JENDL-2
197.6	2.5	44.58	5.58	39.0		L = 0	ENDF-B-5
197.6	2.5	44.7806	5.58064	39.0	0.2	L = 0	JENDL-1
197.6 ± 0.1				(39.0)		WGO= 0.397± 0.06	74SIMPSON+
199.2	2.5	40.3037	1.19967	39.0	0.12	L = 0	JENDL-2
199.2	2.5	40.2	1.2	39.0		L = 0	ENDF-B-5
199.2	2.5	40.3997	1.19967	39.0	0.2	L = 0	JENDL-1
199.2 ± 0.1				(39.0)		WGO= 0.085± 0.04	74SIMPSON+
199.85	2.5	42.2141	3.1101	39.0	0.12	L = 0	JENDL-2
199.85	2.5	42.11	3.11	39.0		L = 0	ENDF-B-5
199.85	2.5	42.3101	3.1101	39.0	0.2	L = 0	JENDL-1
199.85 ± 0.1				(39.0)		WGO= 0.22 ± 0.04	74SIMPSON+
202.1	2.5	39.4594	3.554-1	39.0	0.12	L = 0	JENDL-2
202.1	2.5	39.355	0.355	39.0		L = 0	ENDF-B-5
202.1	2.5	39.5554	3.554-1	39.0	0.2	L = 0	JENDL-1
202.1 ± 0.1				(39.0)		WGO= 0.025± 0.008	74SIMPSON+
203.7	2.5	39.7891	6.850-1	39.0	0.12	L = 0	JENDL-2
203.7	2.5	39.685	0.685	39.0		L = 0	ENDF-B-5
203.7	2.5	39.8851	6.850-1	39.0	0.2	L = 0	JENDL-1
203.7 ± 0.1				(39.0)		WGO= 0.048± 0.015	74SIMPSON+
205.0	2.5	42.4973	3.39332	39.0	0.12	L = 0	JENDL-2
205.0	2.5	42.39	3.39	39.0		L = 0	ENDF-B-5
205.0	2.5	42.5933	3.39332	39.0	0.2	L = 0	JENDL-1
205.0 ± 0.1				(39.0)		WGO= 0.237± 0.04	74SIMPSON+
206.6	2.5	40.8719	1.76795	39.0	0.12	L = 0	JENDL-2
206.6	2.5	40.77	1.77	39.0		L = 0	ENDF-B-5
206.6	2.5	40.968	1.76795	39.0	0.2	L = 0	JENDL-1
206.6 ± 0.1				(39.0)		WGO= 0.123± 0.02	74SIMPSON+
208.2	2.5	42.8556	3.75158	39.0	0.12	L = 0	JENDL-2
208.2	2.5	42.75	3.75	39.0		L = 0	ENDF-B-5
208.2	2.5	42.9516	3.75158	39.0	0.2	L = 0	JENDL-1
208.2 ± 0.1				(39.0)		WGO= 0.26 ± 0.04	74SIMPSON+

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
209.6	2.5	43.1722	4.0682	39.0	0.12	L = 0	JENDL-2
209.6	2.5	43.07	4.07	39.0		L = 0	ENDF-B-5
209.6	2.5	43.2682	4.0682	39.0	0.2	L = 0	JENDL-1
209.6 ± 0.1				(39.0)		WGO= 0.281± 0.04	74SIMPSON+
210.95	2.5	44.7974	5.69345	39.0	0.12	L = 0	JENDL-2
210.95	2.5	44.69	5.69	39.0		L = 0	ENDF-B-5
210.95	2.5	44.8935	5.69345	39.0	0.2	L = 0	JENDL-1
210.95 ± 0.1				(39.0)		WGO= 0.392± 0.06	74SIMPSON+
211.5	2.5	45.4593	6.35531	39.0	0.12	L = 0	JENDL-2
211.5	2.5	45.36	6.36	39.0		L = 0	ENDF-B-5
211.5	2.5	45.5553	6.35531	39.0	0.2	L = 0	JENDL-1
211.5 ± 0.1				(39.0)		WGO= 0.437± 0.06	74SIMPSON+
213.4	2.5	40.9592	1.85524	39.0	0.12	L = 0	JENDL-2
213.4	2.5	40.86	1.86	39.0		L = 0	ENDF-B-5
213.4	2.5	41.0552	1.85524	39.0	0.2	L = 0	JENDL-1
213.4 ± 0.1				(39.0)		WGO= 0.127± 0.02	74SIMPSON+
214.5	2.5	46.1633	7.05928	39.0	0.12	L = 0	JENDL-2
214.5	2.5	46.06	7.06	39.0		L = 0	ENDF-B-5
214.5	2.5	46.2593	7.05928	39.0	0.2	L = 0	JENDL-1
214.5 ± 0.1				(39.0)		WGO= 0.482± 0.06	74SIMPSON+
217.0	2.5	41.9471	2.84307	39.0	0.12	L = 0	JENDL-2
217.0	2.5	41.84	2.84	39.0		L = 0	ENDF-B-5
217.0	2.5	42.0431	2.84307	39.0	0.2	L = 0	JENDL-1
217.0 ± 0.1				(39.0)		WGO= 0.193± 0.04	74SIMPSON+
220.3	2.5	44.3879	5.28393	39.0	0.12	L = 0	JENDL-2
220.3	2.5	44.28	5.28	39.0		L = 0	ENDF-B-5
220.3	2.5	44.4839	5.28393	39.0	0.2	L = 0	JENDL-1
220.3 ± 0.1				(39.0)		WGO= 0.356± 0.06	74SIMPSON+
221.2	2.5	41.8555	2.75147	39.0	0.12	L = 0	JENDL-2
221.2	2.5	41.75	2.75	39.0		L = 0	ENDF-B-5
221.2	2.5	41.9515	2.75147	39.0	0.2	L = 0	JENDL-1
221.2 ± 0.1				(39.0)		WGO= 0.185± 0.04	74SIMPSON+
222.0	2.5	41.7263	2.62234	39.0	0.12	L = 0	JENDL-2
222.0	2.5	41.62	2.62	39.0		L = 0	ENDF-B-5
222.0	2.5	41.8223	2.62234	39.0	0.2	L = 0	JENDL-1
222.0 ± 0.1				(39.0)		WGO= 0.176± 0.04	74SIMPSON+
224.3	2.5	41.5003	2.39626	39.0	0.12	L = 0	JENDL-2
224.3	2.5	41.4	2.4	39.0		L = 0	ENDF-B-5
224.3	2.5	41.5963	2.39626	39.0	0.2	L = 0	JENDL-1
224.3 ± 0.1				(39.0)		WGO= 0.16 ± 0.04	74SIMPSON+
225.3	2.5	46.684	7.58005	39.0	0.12	L = 0	JENDL-2
225.3	2.5	46.58	7.58	39.0		L = 0	ENDF-B-5
225.3	2.5	46.78	7.58005	39.0	0.2	L = 0	JENDL-1
225.3 ± 0.1				(39.0)		WGO= 0.505± 0.07	74SIMPSON+
226.2	2.5	42.0518	2.94783	39.0	0.12	L = 0	JENDL-2
226.2	2.5	41.95	2.95	39.0		L = 0	ENDF-B-5
226.2	2.5	42.1478	2.94783	39.0	0.2	L = 0	JENDL-1
226.2 ± 0.1				(39.0)		WGO= 0.196± 0.04	74SIMPSON+
227.3	2.5	42.5716	3.46759	39.0	0.12	L = 0	JENDL-2
227.3	2.5	42.47	3.47	39.0		L = 0	ENDF-B-5
227.3	2.5	42.6676	3.46759	39.0	0.2	L = 0	JENDL-1
227.3 ± 0.1				(39.0)		WGO= 0.23 ± 0.05	74SIMPSON+
228.8	2.5	40.2233	1.11933	39.0	0.12	L = 0	JENDL-2
228.8	2.5	40.12	1.12	39.0		L = 0	ENDF-B-5
228.8	2.5	40.3193	1.11933	39.0	0.2	L = 0	JENDL-1
228.8 ± 0.11				(39.0)		WGO= 0.074± 0.02	74SIMPSON+
231.8	2.5	40.5504	1.44637	39.0	0.12	L = 0	JENDL-2
231.8	2.5	40.45	1.45	39.0		L = 0	ENDF-B-5
231.8	2.5	40.6464	1.44637	39.0	0.2	L = 0	JENDL-1
231.8 ± 0.11				(39.0)		WGO= 0.095± 0.03	74SIMPSON+
232.9	2.5	47.8944	8.79037	39.0	0.12	L = 0	JENDL-2
232.9	2.5	47.79	8.79	39.0		L = 0	ENDF-B-5
232.9	2.5	47.9904	8.79037	39.0	0.2	L = 0	JENDL-1
232.9 ± 0.11				(39.0)		WGO= 0.576± 0.07	74SIMPSON+
234.1	2.5	47.3356	8.23158	39.0	0.12	L = 0	JENDL-2
234.1	2.5	47.23	8.23	39.0		L = 0	ENDF-B-5
234.1	2.5	47.4316	8.23158	39.0	0.2	L = 0	JENDL-1
234.1 ± 0.11				(39.0)		WGO= 0.538± 0.07	74SIMPSON+
236.0	2.5	40.8553	1.7513	39.0	0.12	L = 0	JENDL-2
236.0	2.5	40.75	1.75	39.0		L = 0	ENDF-B-5

ENERGY (EV)	J	TOTAL WIDTH (MEV)	NEUTRON WIDTH (MEV)	GAMMA WIDTH (MEV)	FISSION WIDTH (MEV)	MISCELLANEOUS	REFERENCE
236.0	2.5	40.9513	1.7513	39.0	0.2	L = 0	JENDL-1
236.0 ± 0.11				(39.0)		WGO= 0.114± 0.03	74SIMPSON+
237.5	2.5	41.955	2.85104	39.0	0.12	L = 0	JENDL-2
237.5	2.5	41.85	2.85	39.0		L = 0	ENDF-B-5
237.5	2.5	42.051	2.85104	39.0	0.2	L = 0	JENDL-1
237.5 ± 0.11				(39.0)		WGO= 0.185± 0.04	74SIMPSON+
238.7	2.5	40.8035	1.69949	39.0	0.12	L = 0	JENDL-2
238.7	2.5	40.7	1.7	39.0		L = 0	ENDF-B-5
238.7	2.5	40.8995	1.69949	39.0	0.2	L = 0	JENDL-1
238.7 ± 0.11				(39.0)		WGO= 0.11 ± 0.03	74SIMPSON+
239.5	2.5	43.0348	3.93085	39.0	0.12	L = 0	JENDL-2
239.5	2.5	42.93	3.93	39.0		L = 0	ENDF-B-5
239.5	2.5	43.1308	3.93085	39.0	0.2	L = 0	JENDL-1
239.5 ± 0.11				(39.0)		WGO= 0.254± 0.05	74SIMPSON+
241.2	2.5	40.8279	1.7239	39.0	0.12	L = 0	JENDL-2
241.2	2.5	40.72	1.72	39.0		L = 0	ENDF-B-5
241.2	2.5	40.9239	1.7239	39.0	0.2	L = 0	JENDL-1
241.2 ± 0.11				(39.0)		WGO= 0.111± 0.03	74SIMPSON+
242.8	2.5	43.654	4.54996	39.0	0.12	L = 0	JENDL-2
242.8	2.5	43.55	4.55	39.0		L = 0	ENDF-B-5
242.8	2.5	43.75	4.54996	39.0	0.2	L = 0	JENDL-1
242.8 ± 0.11				(39.0)		WGO= 0.292± 0.06	74SIMPSON+
244.1	2.5	40.5414	1.43738	39.0	0.12	L = 0	JENDL-2
244.1	2.5	40.44	1.44	39.0		L = 0	ENDF-B-5
244.1	2.5	40.6374	1.43738	39.0	0.2	L = 0	JENDL-1
244.1 ± 0.11				(39.0)		WGO= 0.092± 0.03	74SIMPSON+
244.6	2.5	43.7177	4.61371	39.0	0.12	L = 0	JENDL-2
244.6	2.5	43.61	4.61	39.0		L = 0	ENDF-B-5
244.6	2.5	43.8137	4.61371	39.0	0.2	L = 0	JENDL-1
244.6 ± 0.11				(39.0)		WGO= 0.295± 0.06	74SIMPSON+
246.3	2.5	40.9559	1.85189	39.0	0.12	L = 0	JENDL-2
246.3	2.5	40.85	1.85	39.0		L = 0	ENDF-B-5
246.3	2.5	41.0519	1.85189	39.0	0.2	L = 0	JENDL-1
246.3 ± 0.11				(39.0)		WGO= 0.118± 0.03	74SIMPSON+
247.1	2.5	45.3289	6.22489	39.0	0.12	L = 0	JENDL-2
247.1	2.5	45.22	6.22	39.0		L = 0	ENDF-B-5
247.1	2.5	45.4249	6.22489	39.0	0.2	L = 0	JENDL-1
247.1 ± 0.11				(39.0)		WGO= 0.396± 0.06	74SIMPSON+
248.6	2.5	51.9068	12.8028	39.0	0.12	L = 0	JENDL-2
248.6	2.5	51.8	12.8	39.0		L = 0	ENDF-B-5
248.6	2.5	52.0028	12.8028	39.0	0.2	L = 0	JENDL-1
248.6 ± 0.11				(39.0)		WGO= 0.812± 0.12	74SIMPSON+
249.7	2.5	42.5804	3.47642	39.0	0.12	L = 0	JENDL-2
249.7	2.5	42.48	3.48	39.0		L = 0	ENDF-B-5
249.7	2.5	42.6764	3.47642	39.0	0.2	L = 0	JENDL-1
249.7 ± 0.13				(39.0)		WGO= 0.22 ± 0.05	74SIMPSON+

* A denotes $2g\Gamma_n$

** L : orbital angular momentum

GNO: Γ_n^0

WGO: $2g\Gamma_n^0$

Table 6 Unresolved resonance parameters of ^{243}Am and the calculated cross sections.

$S_0 = 0.93 \times 10^{-4}$, $S_1 = 2.44 \times 10^{-4}$, R = 9.34 fm
D_{obs} = 0.67 eV , Γ_γ = 39 meV , Γ_f = 0.12 meV.

E_n (keV)	$\sigma_{n,T}$ (barns)	$\sigma_{n,\gamma}$ (barns)	$\sigma_{n,f}$ (barns)
0.215	37.2	23.2	0.071
0.5	28.3	14.6	0.046
1.0	23.3	9.91	0.030
2.0	19.8	6.76	0.021
5.0	16.8	4.23	0.013
10.0	15.3	3.15	0.0097
20.0	14.3	2.51	0.0077
30.0	13.9	2.23	0.0068

Table 7 Resonance integrals for ^{243}Am

	fission (barns)	capture (barns)
Calculated		
JENDL-2	11.4	1816
JENDL-1	5.7	1822
ENDF/B-V	6.2	1820
Experimental		
57 Butler[47]		2340
67 Bak[25]		2300 ± 200
68 Folger[48]		2250
69 Schuman[26]		2160 ± 120
75 Zhuravlev[29]	9 ± 1	
76 Gavrilov[30]	17.1 ± 1.3	2200 ± 150

Table 8 Level scheme, level density parameters and Q-values for ^{243}Am

a) Level scheme of ^{243}Am

No.	Energy (keV)	I^{π}	No.	Energy (keV)	I^{π}
G.S.	0	5/2 -	5	143.5	9/2 +
1	42.2	7/2 -	6	189.3	11/2 +
2	84.0	5/2 +	7	267	3/2 -
3	96.4	9/2 -	8	298	5/2 -
4	109.3	7/2 +	9	344	7/2 -

Levels above 383 keV are assumed to be overlapping.

b) Level density Parameters

	^{243}Am	^{244}Am
a (MeV^{-1})	26.9094	26.9754
$\alpha_M^2/U^{1/2}$ ($MeV^{1/2}$)	17.9378	18.0090
Δ (MeV)	0.5	0.0
C_0 (MeV)	5872.94	5911.57
E_x (MeV)	3.6173	3.1148
S_n (MeV)	6.3643	3.3632

c) Q-values and threshold energies (MeV)

	Q-value	Threshold energy
(n,2n)	-6.3643	6.3907
(n,3n)	-11.9055	11.9549
(n,4n)	-18.4880	18.5647

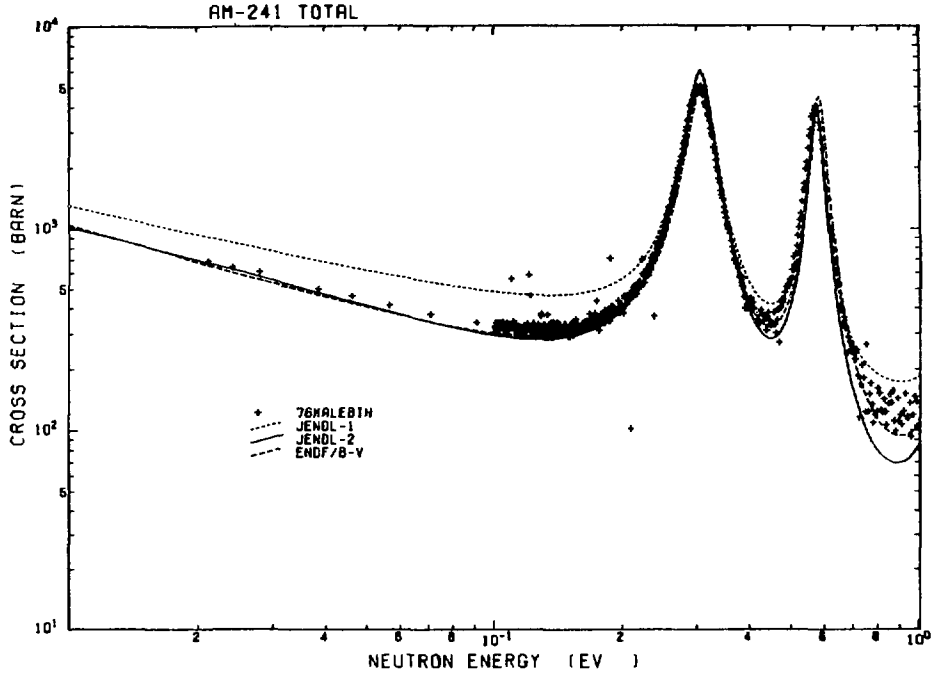


Fig.1 Total cross section of ^{241}Am below 1 ev

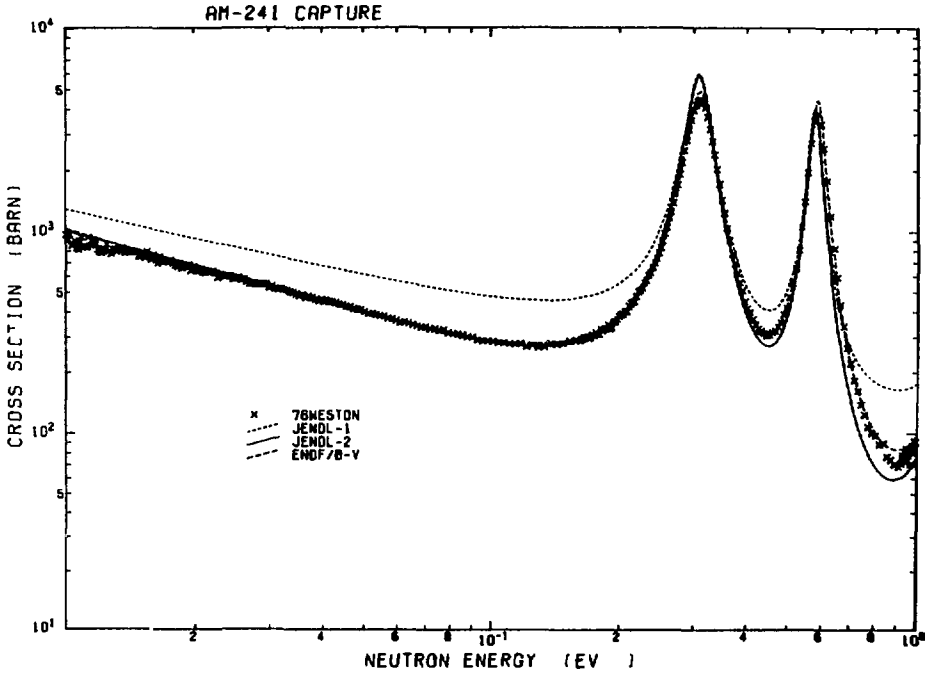


Fig.2 Capture cross section of ^{241}Am below 1 eV

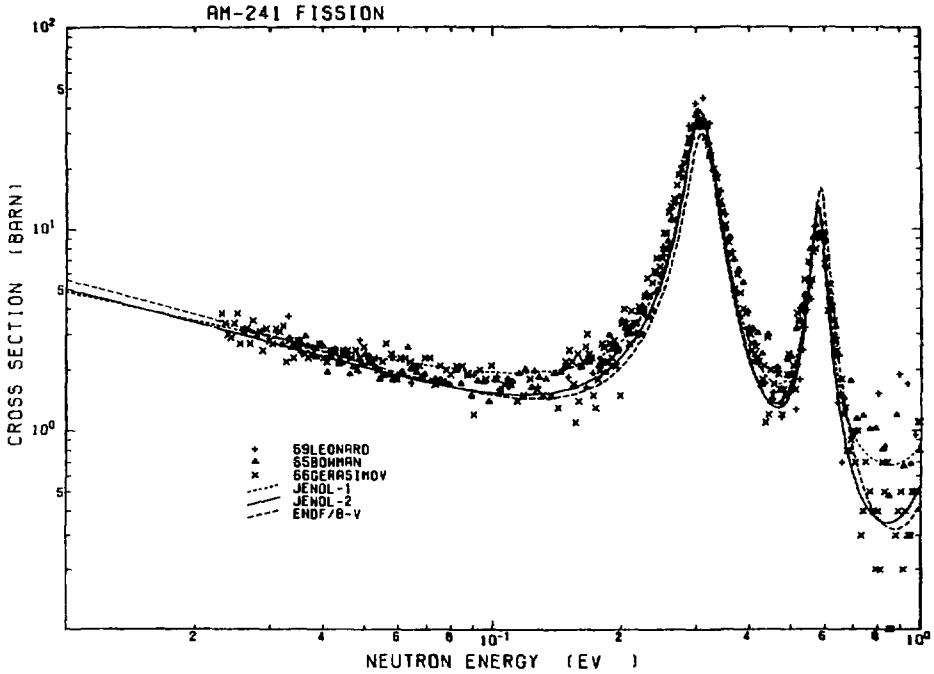


Fig.3 Fission cross section of ^{241}Am below 1 eV

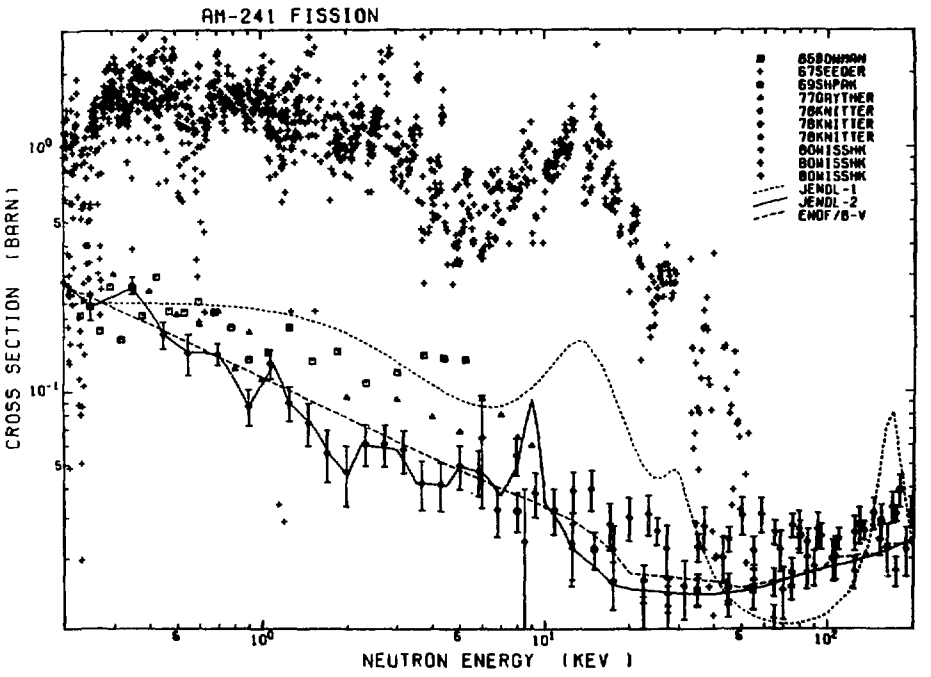


Fig.4 Fission cross section of ^{241}Am in the energy range between 200 eV and 200 keV

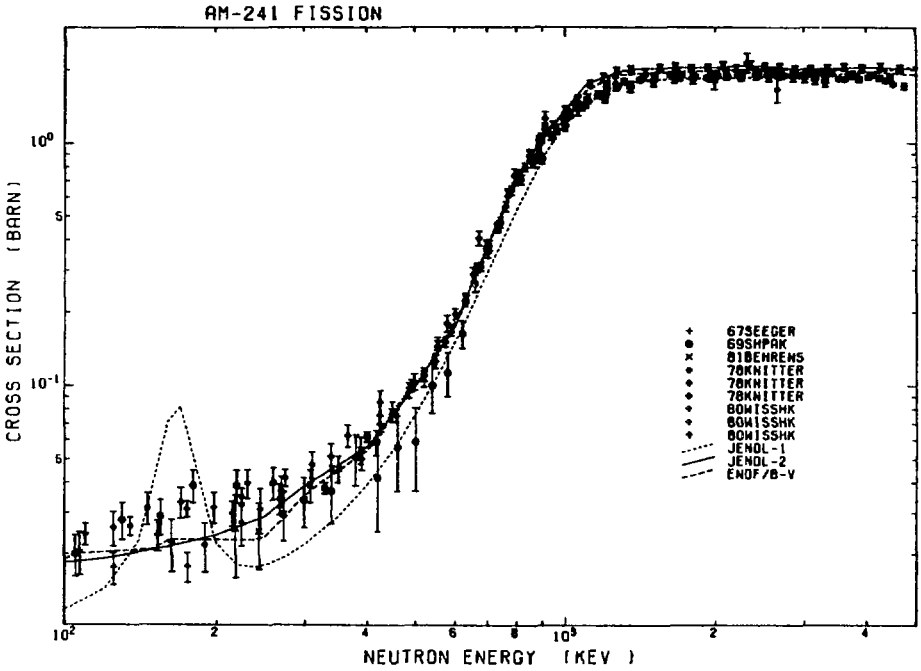


Fig.5 Fission cross section of ^{241}Am in the energy range between 100 keV and 5 MeV

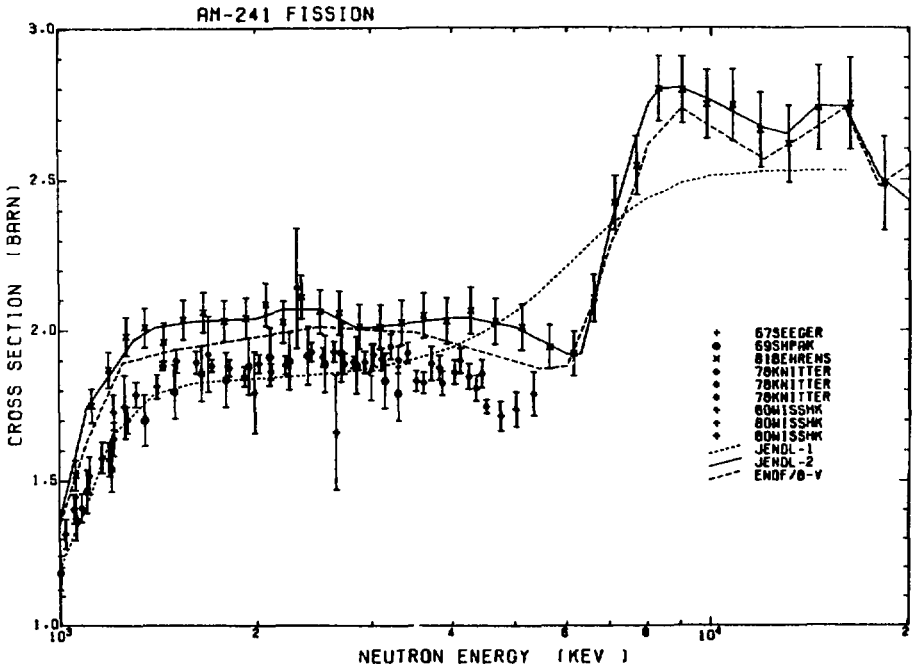


Fig.6 Fission cross section of ^{241}Am in the energy range between 1 MeV and 20 MeV

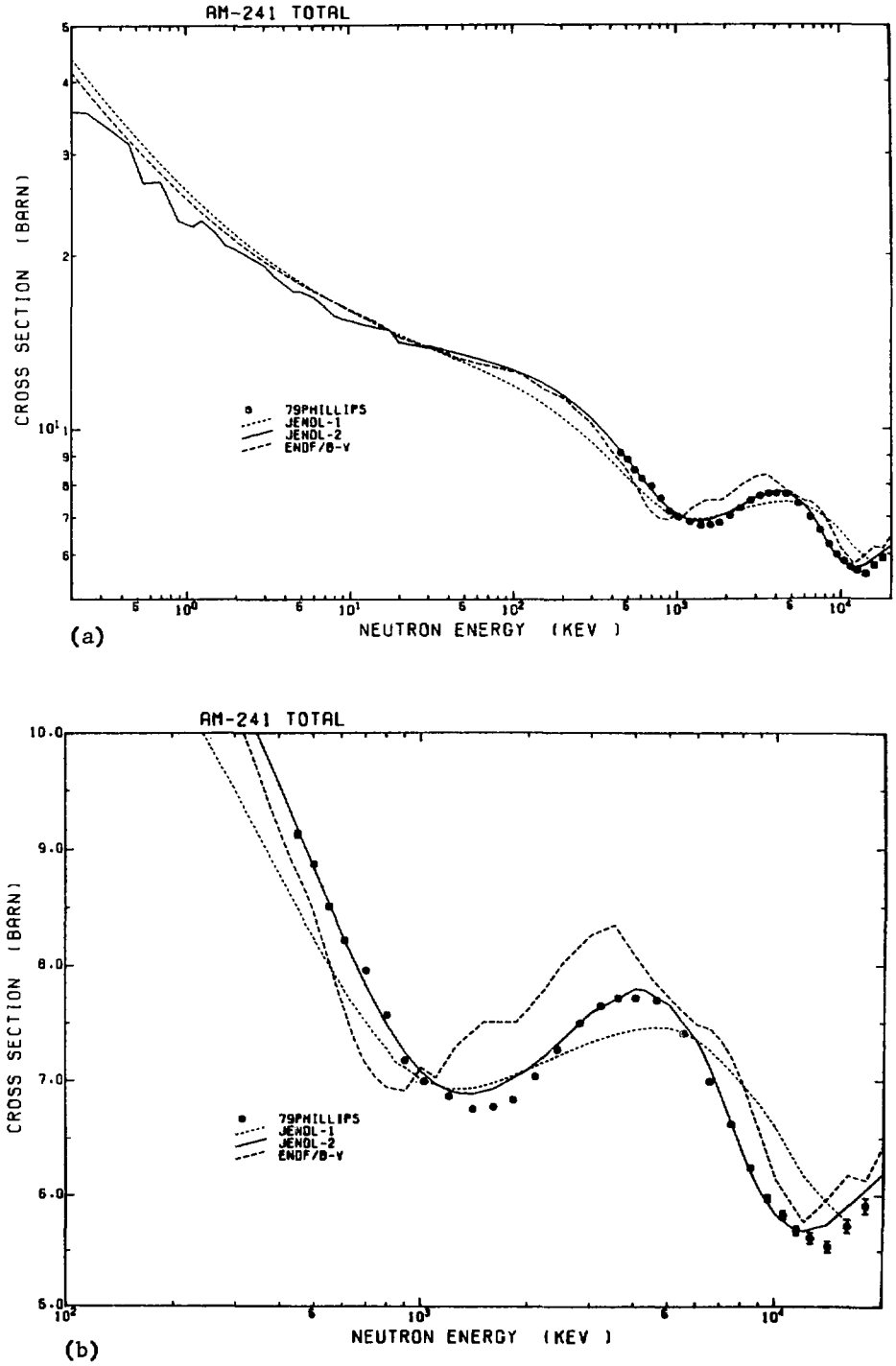
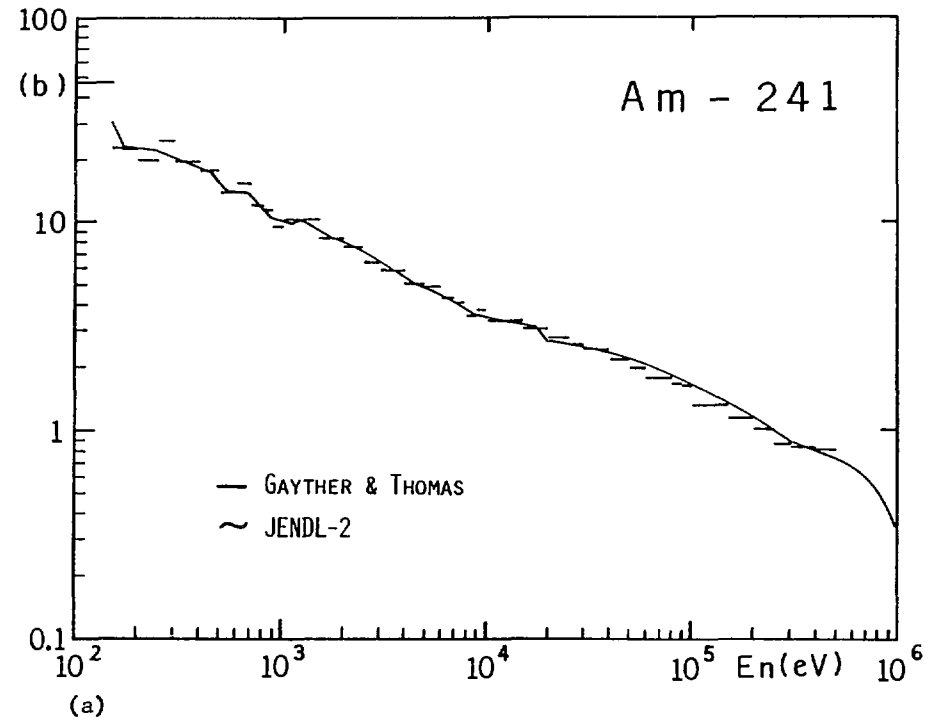


Fig.7 Total cross section of ^{241}Am calculated from the present optical potential parameters with the measured data of Phillips and Howe



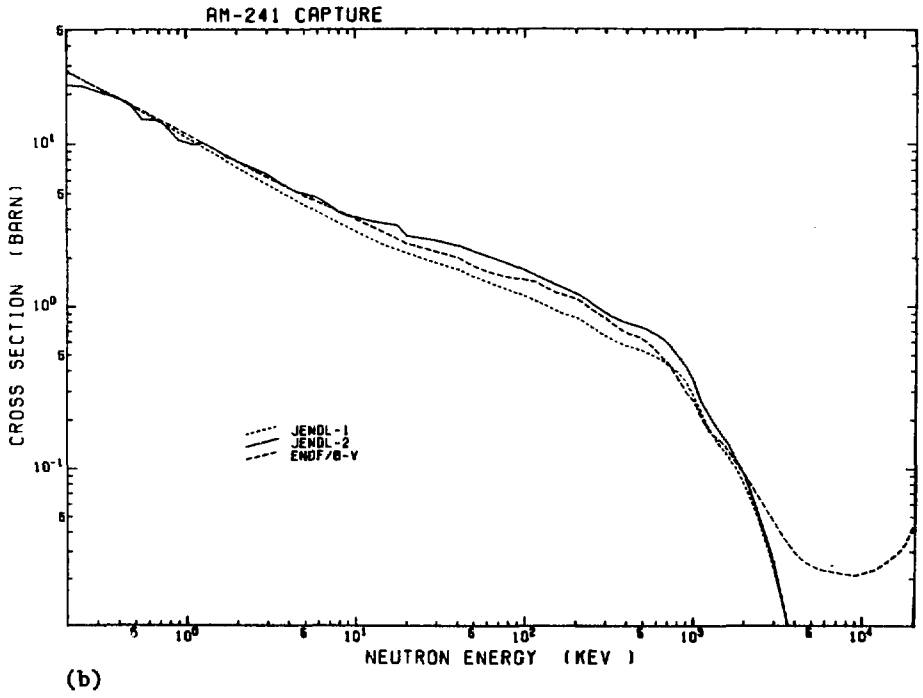


Fig.8 Capture cross section of ^{241}Am

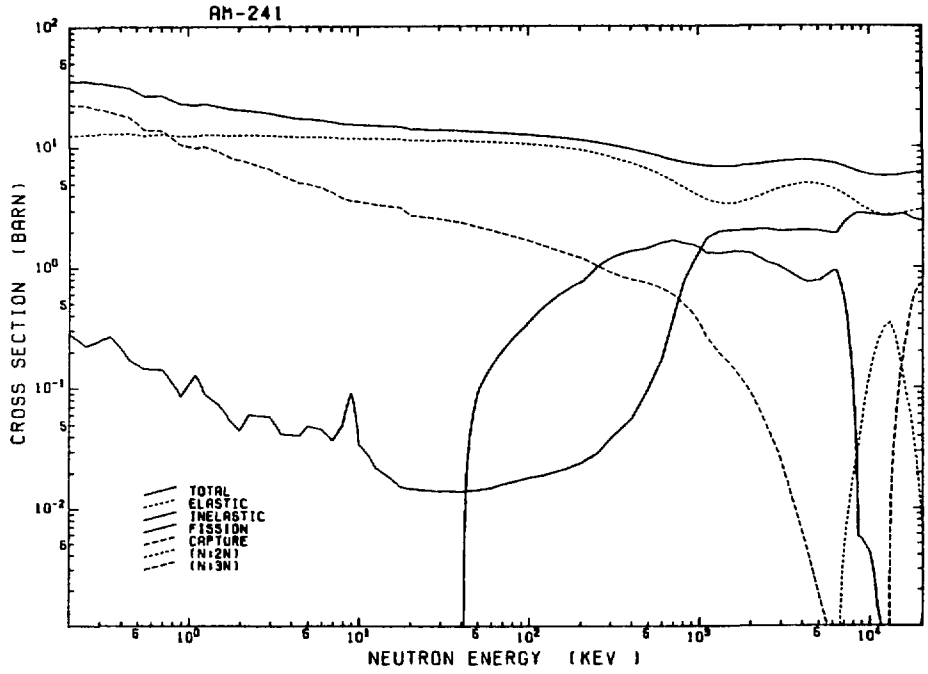


Fig.9 Cross sections of ^{241}Am above

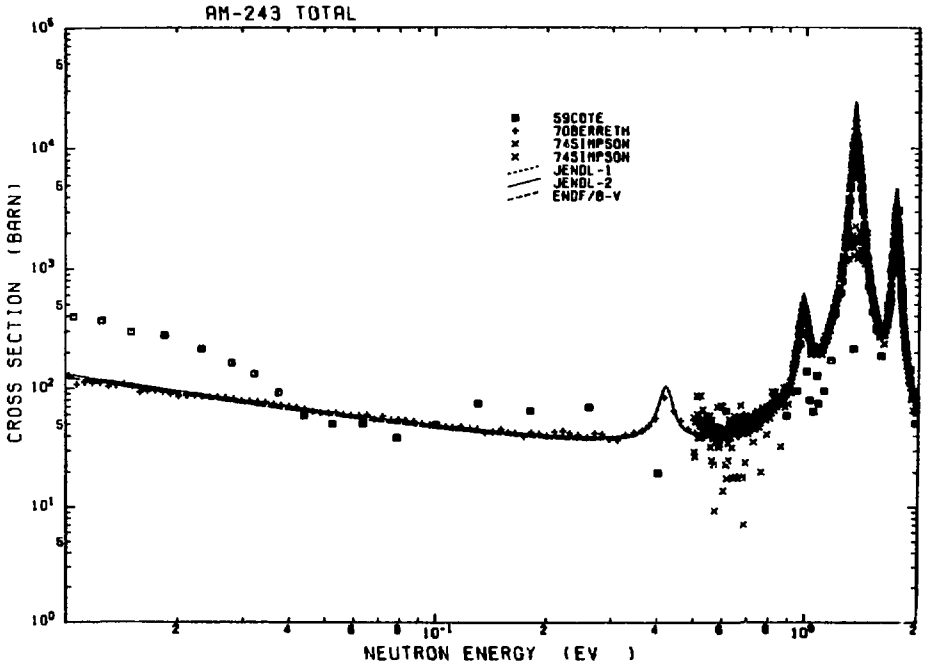


Fig.10 Total cross section of ^{243}Am below 2 eV

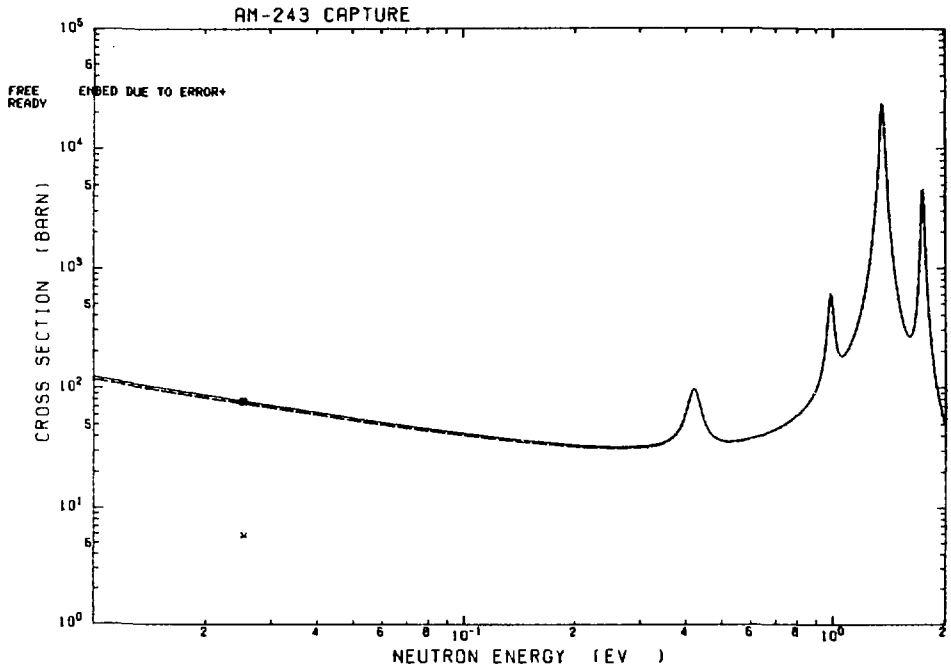


Fig.11 Capture cross section of ^{243}Am below 2 eV

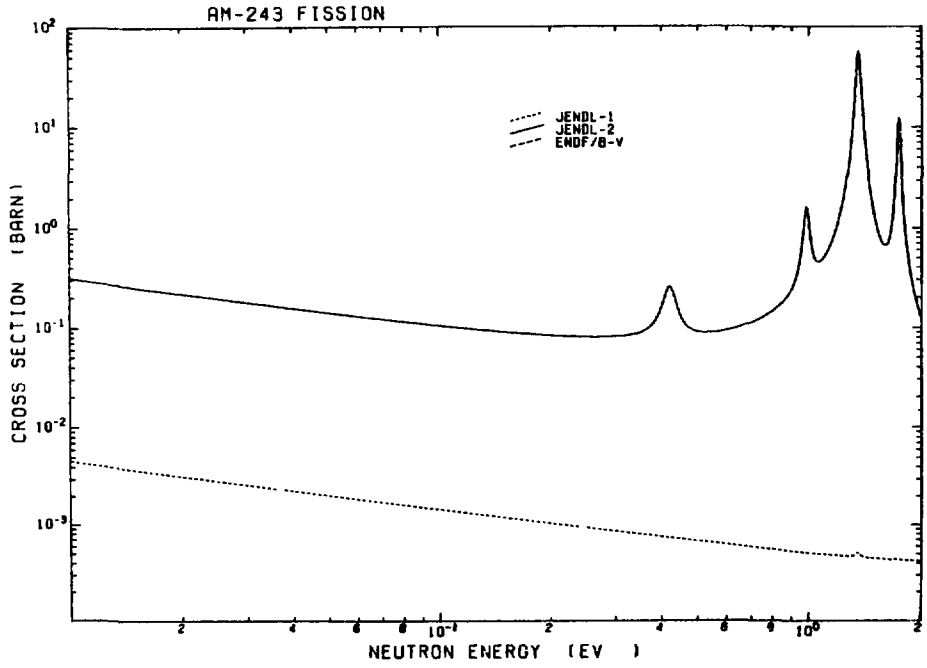


Fig.12 Fission cross section of ^{243}Am below 2 eV

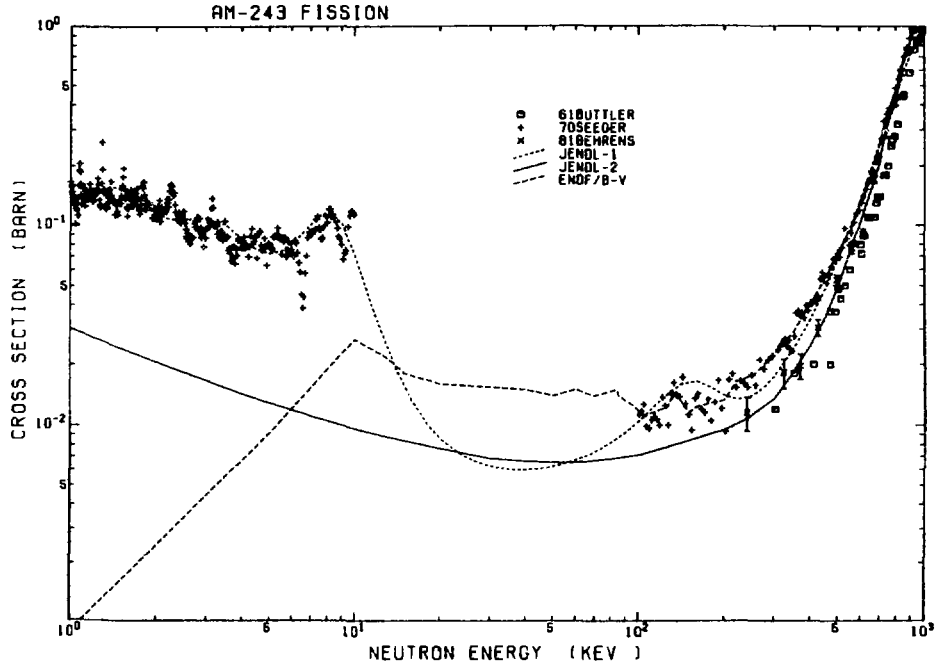


Fig.13 Fission cross section of ^{243}Am in the energy range between 1 keV and 1 MeV

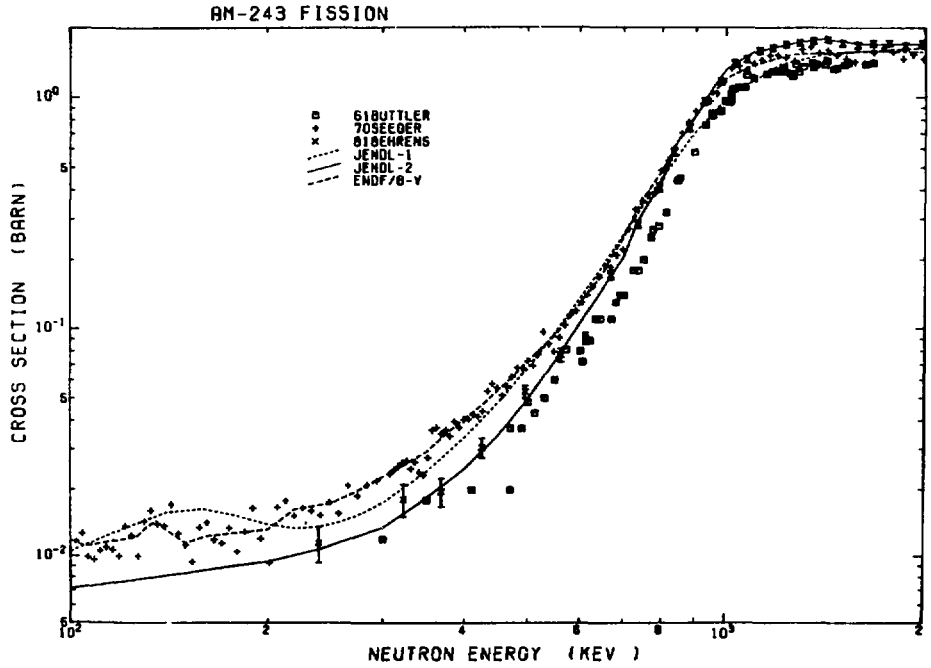


Fig.14 Fission cross section of ^{243}Am in the energy range between 100 keV and 2 MeV

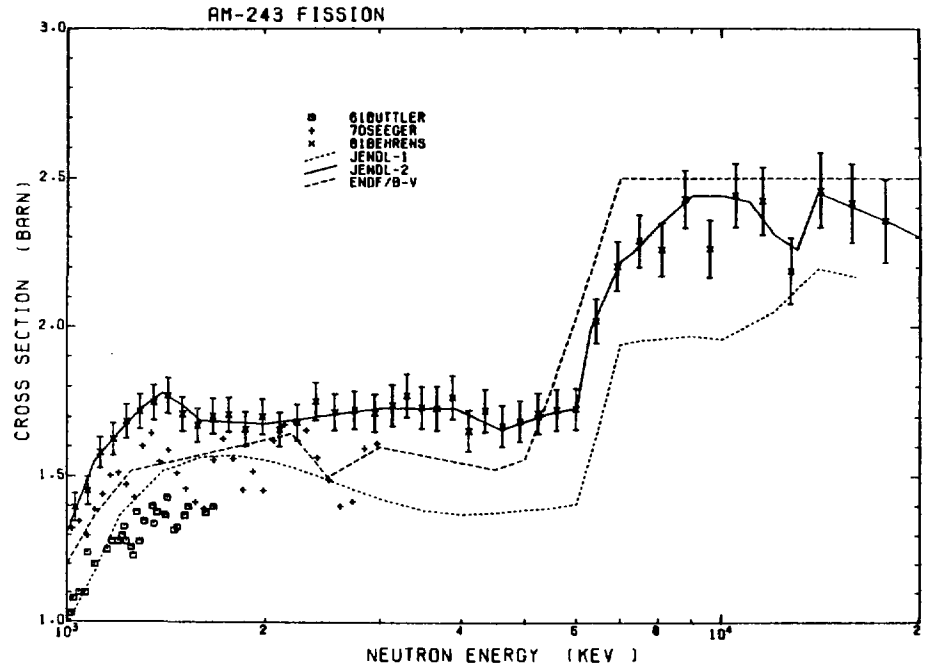


Fig.15 Fission cross section of ^{243}Am in the energy range between 1 MeV and 20 MeV

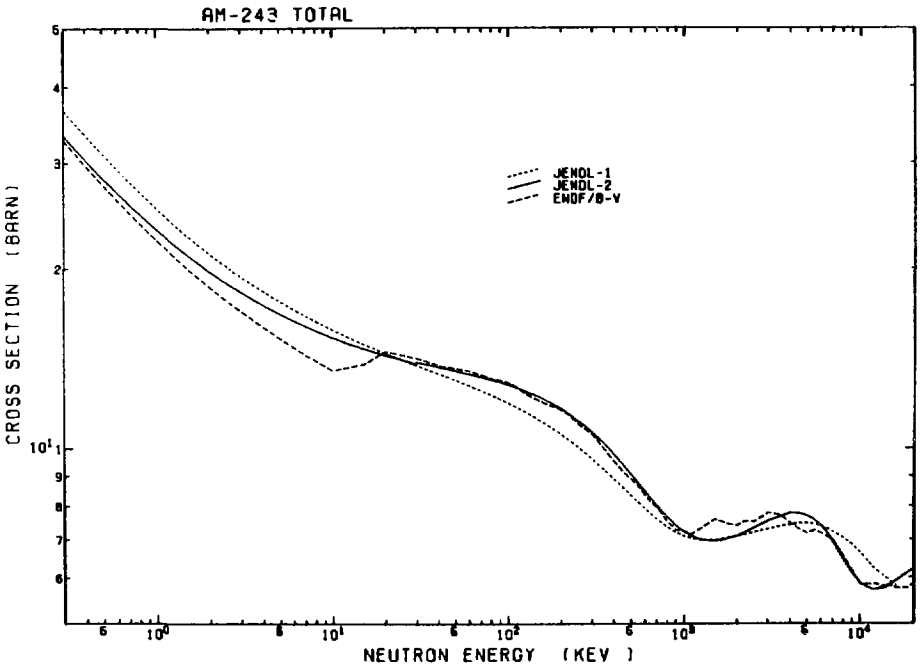


Fig.16 Total cross section of ^{243}Am

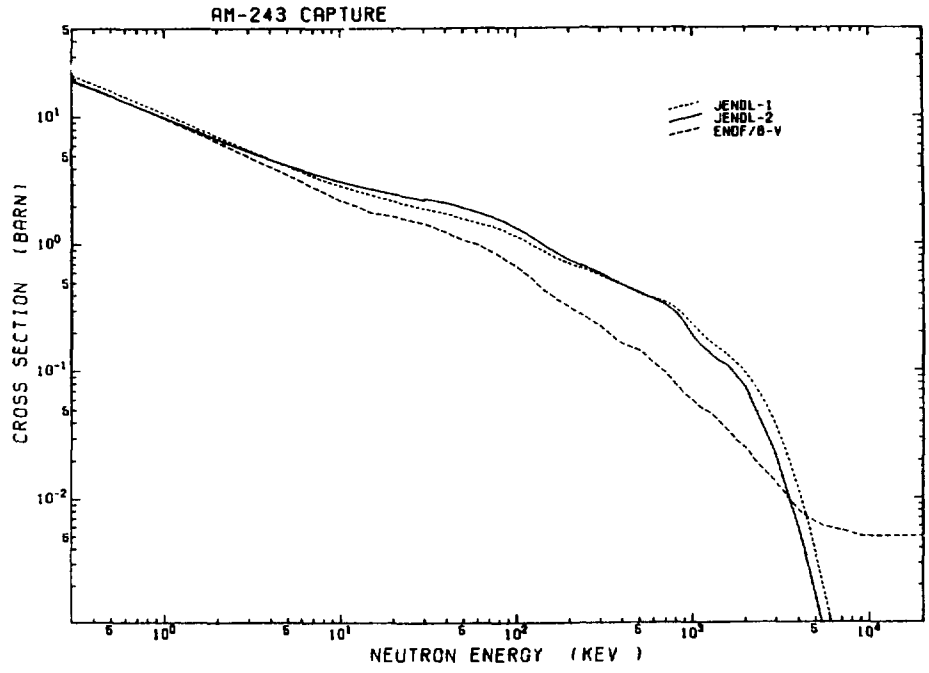


Fig.17 Capture cross section of ^{243}Am

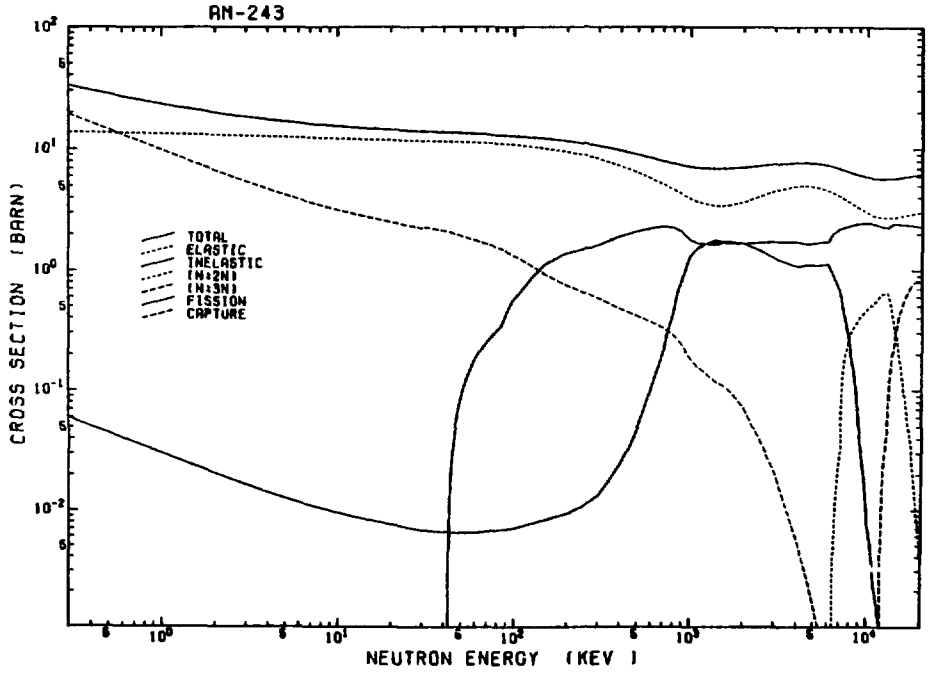


Fig.18 Cross sections of ^{243}Am

Appendix

List with ENDF/B format

File 4 is omitted from the list

Americium-241

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT  SEQ
 9.52410+ 4 2.38986+ 2          1          1          0          359541 1451    1
 0.0     + 0 0.0     + 0        0          0          1           09541 1451    2
                                                                  9541 1451    3
                                1        451         38            9541 1451    4
                                1        452          5            9541 1451    5
                                1        455          7            9541 1451    6
                                1        456          3            9541 1451    7
                                2        151        377            9541 1451    8
                                3          1         26            9541 1451    9
                                3          2         26            9541 1451   10
                                3          4         24            9541 1451   11
                                3         16         10            9541 1451   12
                                3         17          7            9541 1451   13
                                3         18         20            9541 1451   14
                                3         37          4            9541 1451   15
                                3         51         24            9541 1451   16
                                3         52         23            9541 1451   17
                                3         53         21            9541 1451   18
                                3         54         20            9541 1451   19
                                3         55         20            9541 1451   20
                                3         56         19            9541 1451   21
                                3         57         19            9541 1451   22
                                3         58         18            9541 1451   23
                                3         59         17            9541 1451   24
                                3         60         17            9541 1451   25
                                3         61         16            9541 1451   26
                                3         62         16            9541 1451   27
                                3         63         15            9541 1451   28
                                3         64         15            9541 1451   29
                                3         65         15            9541 1451   30
                                3         66         14            9541 1451   31
                                3         91         14            9541 1451   32
                                3        102         26            9541 1451   33
                                3        251         26            9541 1451   34
                                5         16         15            9541 1451   35
                                5         17         19            9541 1451   36
                                5         18          7            9541 1451   37
                                5         91          7            9541 1451   38
                                                                  9541 1  0    39
 9.52410+ 4 2.38986+ 2          0          2          0          09541 1452   40
 0.0     + 0 0.0     + 0        0          0          1          49541 1452   41
         4           2          0          0          0          09541 1452   42
 1.00000- 5 3.22350+ 0 6.20000+ 6 4.15350+ 0 8.00000+ 6 4.42210+ 09541 1452   43
 2.00000+ 7 6.22210+ 0                                             9541 1452   44
                                                                   9541 1  0   45
 9.52410+ 4 2.38986+ 2          0          2          0          09541 1455   46
 0.0     + 0 0.0     + 0        0          0          6          09541 1455   47
 1.29000- 2 3.13000- 2 1.35000- 1 3.33000- 1 1.36000+ 0 4.04000+ 09541 1455   48
 0.0     + 0 0.0     + 0        0          0          1          49541 1455   49
```

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT   SEQ
         4          2          0          0          0        09541 1455   50
 1.00000- 5 4.50000- 3 6.20000+ 6 4.50000- 3 8.00000+ 6 3.10000- 39541 1455   51
 2.00000+ 7 3.10000- 3                                         9541 1455   52
                                                               9541 1  0   53
 9.52410+ 4 2.38986+ 2          0          1          0        09541 1456   54
 0.0     + 0 0.0     + 0          0          0          2        09541 1456   55
 3.21900+ 0 1.50000- 7                                         9541 1456   56
                                                               9541 1  0   57
                                                               9541 0  0   58
 9.52410+ 4 2.38986+ 2          0          0          1        09541 2151   59
 9.52410+ 4 1.00000+ 0          0          0          2        09541 2151   60
 1.00000- 5 1.50000+ 2          1          2          0        09541 2151   61
 2.50000+ 0 9.37000- 1          0          0          1        09541 2151   62
 2.38930+ 2 0.0     + 0          0          0       1164     1949541 2.51   63
-5.00000- 1 2.50000+ 0 4.40590- 2 8.90300- 5 4.37700- 2 2.00000- 49541 2151   64
-4.50000- 1 2.50000+ 0 4.40304- 2 6.03800- 5 4.37700- 2 2.00000- 49541 2151   65
-4.00000- 1 2.50000+ 0 4.40497- 2 7.97300- 5 4.37700- 2 2.00000- 49541 2151   66
-3.20000- 1 2.50000+ 0 4.40210- 2 5.09600- 5 4.37700- 2 2.00000- 49541 2151   67
-2.00000- 1 2.50000+ 0 4.40249- 2 5.48800- 5 4.37700- 2 2.00000- 49541 2151   68
 3.08000- 1 2.50000+ 0 4.41200- 2 6.00000- 5 4.37700- 2 2.90000- 49541 2151   69
 5.76000- 1 2.50000+ 0 4.39850- 2 7.50000- 5 4.37700- 2 1.4000 - 49541 2151   70
 1.27600+ 0 2.50000+ 0 4.71920- 2 3.22000- 4 4.65000- 2 3.70000- 49541 2151   71
 1.92800+ 0 2.50000+ 0 4.44930- 2 1.13000- 4 4.43000- 2 8.00000- 59541 2151   72
 2.37200+ 0 2.50000+ 0 4.26530- 2 7.30000- 5 4.24000- 2 1.80000- 49541 2151   73
 2.59800+ 0 2.50000+ 0 4.63170- 2 1.47000- 4 4.60000- 2 1.70000- 49541 2151   74
 3.97300+ 0 2.50000+ 0 4.48700- 2 2.10000- 4 4.45000- 2 1.60000- 49541 2151   75
 4.96800+ 0 2.50000+ 0 4.44150- 2 1.75000- 4 4.38000- 2 4.40000- 49541 2151   76
 5.41500+ 0 2.50000+ 0 4.55900- 2 7.60000- 4 4.42000- 2 6.30000- 49541 2151   77
 5.80000+ 0 2.50000+ 0 4.40010- 2 2.00000- 6 4.37700- 2 2.29000- 49541 2151   78
 6.11700+ 0 2.50000+ 0 4.43440- 2 1.24000- 4 4.38000- 2 4.20000- 49541 2151   79
 6.74500+ 0 2.50000+ 0 4.40180- 2 2.80000- 5 4.37700- 2 2.20000- 49541 2151   80
 7.65900+ 0 2.50000+ 0 4.39070- 2 3.70000- 5 4.37700- 2 1.00000- 49541 2151   81
 8.17300+ 0 2.50000+ 0 4.29280- 2 1.08000- 4 4.27000- 2 1.20000- 49541 2151   82
 9.11300+ 0 2.50000+ 0 4.47690- 2 3.89000- 4 4.42000- 2 1.80000- 49541 2151   83
 9.85100+ 0 2.50000+ 0 4.52560- 2 4.06000- 4 4.39000- 2 9.50000- 49541 2151   84
 1.01160+ 1 2.50000+ 0 4.39560- 2 2.60000- 5 4.37700- 2 1.60000- 49541 2151   85
 1.04030+ 1 2.50000+ 0 4.27860- 2 3.26000- 4 4.24000- 2 6.00000- 59541 2151   86
 1.09970+ 1 2.50000+ 0 4.70430- 2 4.13000- 4 4.65000- 2 1.30000- 49541 2151   87
 1.15830+ 1 2.50000+ 0 4.40150- 2 1.60000- 5 4.37700- 2 2.29000- 49541 2151   88
 1.21370+ 1 2.50000+ 0 4.40060- 2 7.00000- 6 4.37700- 2 2.29000- 49541 2151   89
 1.28790+ 1 2.50000+ 0 4.39610- 2 1.31000- 4 4.37700- 2 6.00000- 59541 2151   90
 1.38740+ 1 2.50000+ 0 4.40110- 2 1.20000- 5 4.37700- 2 2.29000- 49541 2151   91
 1.43600+ 1 2.50000+ 0 4.40700- 2 7.10000- 5 4.37700- 2 2.29000- 49541 2151   92
 1.46820+ 1 2.50000+ 0 4.30520- 2 2.48200- 3 4.03000- 2 2.70000- 49541 2151   93
 1.56890+ 1 2.50000+ 0 3.96440- 2 2.44000- 4 3.93000- 2 1.00000- 49541 2151   94
 1.63880+ 1 2.50000+ 0 4.31870- 2 1.27700- 3 4.18000- 2 1.10000- 49541 2151   95
 1.68490+ 1 2.50000+ 0 4.21660- 2 6.46000- 4 4.12000- 2 3.20000- 49541 2151   96
 1.77290+ 1 2.50000+ 0 3.79910- 2 3.91000- 4 3.73000- 2 3.00000- 49541 2151   97
 1.81670+ 1 2.50000+ 0 4.40160- 2 1.70000- 5 4.37700- 2 2.29000- 49541 2151   98
 1.94450+ 1 2.50000+ 0 4.40130- 2 2.13000- 4 4.37700- 2 3.00000- 59541 2151   99
 2.03330+ 1 2.50000+ 0 4.40330- 2 3.40000- 5 4.37700- 2 2.29000- 49541 2151  100
 2.08800+ 1 2.50000+ 0 4.40880- 2 8.90000- 5 4.37700- 2 2.29000- 49541 2151  101
 2.17400+ 1 2.50000+ 0 4.41210- 2 8.10000- 5 4.37700- 2 2.70000- 49541 2151  102
 2.27480+ 1 2.50000+ 0 4.40680- 2 6.90000- 5 4.37700- 2 2.29000- 49541 2151  103
 2.30790+ 1 2.50000+ 0 4.28870- 2 4.17000- 4 4.22000- 2 2.70000- 49541 2151  104
```

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT  SEQ
2.33370+ 1 2.50000+ 0 4.31150- 2 4.45000- 4 4.25000- 2 1.70000- 49541 2151  105
2.41920+ 1 2.50000+ 0 4.06440- 2 1.30400- 3 3.92000- 2 1.40000- 49541 2151  106
2.50080+ 1 2.50000+ 0 4.40130- 2 1.40000- 5 4.37700- 2 2.29000- 49541 2151  107
2.56340+ 1 2.50000+ 0 3.91480- 2 1.25800- 3 3.76000- 2 2.90000- 49541 2151  108
2.64980+ 1 2.50000+ 0 2.25370- 2 4.87000- 4 2.20000- 2 5.00000- 59541 2151  109
2.66690+ 1 2.50000+ 0 4.41770- 2 2.17000- 4 4.37700- 2 1.90000- 49541 2151  110
2.75750+ 1 2.50000+ 0 4.41640- 2 1.65000- 4 4.37700- 2 2.29000- 49541 2151  111
2.77260+ 1 2.50000+ 0 7.13379- 2 5.09000- 4 7.06000- 2 2.29000- 49541 2151  112
2.83550+ 1 2.50000+ 0 4.54300- 2 5.70000- 4 4.47000- 2 1.60000- 49541 2151  113
2.89030+ 1 2.50000+ 0 4.92270- 2 4.67000- 4 4.86000- 2 1.60000- 49541 2151  114
2.95040+ 1 2.50000+ 0 4.54010- 2 7.01000- 4 4.46000- 2 1.00000- 49541 2151  115
2.99560+ 1 2.50000+ 0 4.40490- 2 5.00000- 5 4.37700- 2 2.29000- 49541 2151  116
3.08220+ 1 2.50000+ 0 4.41490- 2 1.50000- 4 4.37700- 2 2.29000- 49541 2151  117
3.10200+ 1 2.50000+ 0 4.43350- 2 3.36000- 4 4.37700- 2 2.29000- 49541 2151  118
3.12510+ 1 2.50000+ 0 4.38160- 2 9.97000- 4 4.26000- 2 2.20000- 49541 2151  119
3.20300+ 1 2.50000+ 0 4.79800- 2 3.00000- 4 4.74000- 2 2.80000- 49541 2151  120
3.35100+ 1 2.50000+ 0 4.40590- 2 6.00000- 5 4.37700- 2 2.29000- 49541 2151  121
3.40280+ 1 2.50000+ 0 4.62570- 2 6.28000- 4 4.54000- 2 2.29000- 49541 2151  122
3.44600+ 1 2.50000+ 0 4.41240- 2 1.25000- 4 4.37700- 2 2.29000- 49541 2151  123
3.49280+ 1 2.50000+ 0 4.36410- 2 6.12000- 4 4.22000- 2 2.29000- 49541 2151  124
3.54850+ 1 2.50000+ 0 5.12560- 2 4.27000- 4 5.06000- 2 2.29000- 49541 2151  125
3.62500+ 1 2.50000+ 0 4.41660- 2 1.67000- 4 4.37700- 2 2.29000- 49541 2151  126
3.64830+ 1 2.50000+ 0 4.40990- 2 1.00000- 4 4.37700- 2 2.29000- 49541 2151  127
3.69790+ 1 2.50000+ 0 5.55050- 2 2.99500- 3 5.20000- 2 5.10000- 49541 2151  128
3.83660+ 1 2.50000+ 0 4.95600- 2 2.26000- 3 4.70000- 2 3.00000- 49541 2151  129
3.88300+ 1 2.50000+ 0 4.40540- 2 5.50000- 5 4.37700- 2 2.29000- 49541 2151  130
3.96170+ 1 2.50000+ 0 4.17101- 2 1.29500- 3 4.02000- 2 2.15100- 49541 2151  131
4.00670+ 1 2.50000+ 0 7.86699- 2 5.41000- 4 7.79000- 2 2.29000- 49541 2151  132
4.03960+ 1 2.50000+ 0 6.71769- 2 9.48000- 4 6.60000- 2 2.29000- 49541 2151  133
4.12980+ 1 2.50000+ 0 4.40830- 2 8.40000- 5 4.37700- 2 2.29000- 49541 2151  134
4.17910+ 1 2.50000+ 0 4.43540- 2 3.55000- 4 4.37700- 2 2.29000- 49541 2151  135
4.21300+ 1 2.50000+ 0 4.41490- 2 1.50000- 4 4.37700- 2 2.29000- 49541 2151  136
4.32940+ 1 2.50000+ 0 1.90340- 2 8.05000- 4 1.80000- 2 2.29000- 49541 2151  137
4.35740+ 1 2.50000+ 0 3.70110- 2 5.82000- 4 3.62000- 2 2.29000- 49541 2151  138
4.44160+ 1 2.50000+ 0 4.41170- 2 1.18000- 4 4.37700- 2 2.29000- 49541 2151  139
4.49210+ 1 2.50000+ 0 4.40730- 2 7.40000- 5 4.37700- 2 2.29000- 49541 2151  140
4.60730+ 1 2.50000+ 0 4.46940- 2 6.65000- 4 4.38000- 2 2.29000- 49541 2151  141
4.65660+ 1 2.50000+ 0 2.34000- 2 3.71000- 4 2.28000- 2 2.29000- 49541 2151  142
4.75350+ 1 2.50000+ 0 4.28820- 2 1.05300- 3 4.16000- 2 2.29000- 49541 2151  143
4.87650+ 1 2.50000+ 0 4.09420- 2 7.13000- 4 4.00000- 2 2.29000- 49541 2151  144
4.93320+ 1 2.50000+ 0 4.42190- 2 2.20000- 4 4.37700- 2 2.29000- 49541 2151  145
5.02780+ 1 2.50000+ 0 5.44710- 2 2.44200- 3 5.28000- 2 2.29000- 49541 2151  146
5.08470+ 1 2.50000+ 0 3.64220- 2 3.93000- 4 3.58000- 2 2.29000- 49541 2151  147
5.19840+ 1 2.50000+ 0 5.18140- 2 1.38500- 3 5.02000- 2 2.29000- 49541 2151  148
5.30140+ 1 2.50000+ 0 4.41640- 2 1.65000- 4 4.37700- 2 2.29000- 49541 2151  149
5.34930+ 1 2.50000+ 0 4.41830- 2 1.84000- 4 4.37700- 2 2.29000- 49541 2151  150
5.44070+ 1 2.50000+ 0 4.40720- 2 7.30000- 5 4.37700- 2 2.29000- 49541 2151  151
5.49900+ 1 2.50000+ 0 1.10172- 1 1.44300- 3 1.08500- 1 2.29000- 49541 2151  152
5.55950+ 1 2.50000+ 0 1.44212- 1 2.13000- 4 1.43770- 1 2.29000- 49541 2151  153
5.59450+ 1 2.50000+ 0 1.45431- 1 1.43200- 3 1.43770- 1 2.29000- 49541 2151  154
5.61580+ 1 2.50000+ 0 1.44948- 1 9.49000- 4 1.43770- 1 2.29000- 49541 2151  155
5.73720+ 1 2.50000+ 0 1.85375- 1 4.14600- 3 1.81000- 1 2.29000- 49541 2151  156
5.90660+ 1 2.50000+ 0 1.08018- 1 5.89000- 4 1.07200- 1 2.29000- 49541 2151  157
6.00450+ 1 2.50000+ 0 1.44284- 1 2.85000- 4 1.43770- 1 2.29000- 49541 2151  158
6.03810+ 1 2.50000+ 0 1.44139- 1 1.40000- 4 1.43770- 1 2.29000- 49541 2151  159
```

```
........10........20........30........40........50........60......MAT MF MT  SEQ
 6.12580+ 1 2.50000+ 0 1.76601- 1 1.67200- 3 1.74700- 1 2.29000- 49541 2151  160
 6.16130+ 1 2.50000+ 0 1.44433- 1 4.34000- 4 1.43770- 1 2.29000- 49541 2151  161
 6.25490+ 1 2.50000+ 0 1.44221- 1 2.22000- 4 1.43770- 1 2.29000- 49541 2151  162
 6.35070+ 1 2.50000+ 0 1.44198- 1 1.99000- 4 1.43770- 1 2.29000- 49541 2151  163
 6.40390+ 1 2.50000+ 0 1.51371- 1 4.04200- 3 1.47100- 1 2.29000- 49541 2151  164
 6.45390+ 1 2.50000+ 0 1.40483- 1 1.95400- 3 1.38300- 1 2.29000- 49541 2151  165
 6.51640+ 1 2.50000+ 0 1.55116- 1 5.18700- 3 1.49700- 1 2.29000- 49541 2151  166
 6.57330+ 1 2.50000+ 0 1.20119- 1 1.09000- 3 1.18800- 1 2.29000- 49541 2151  167
 6.63140+ 1 2.50000+ 0 1.76465- 1 1.03600- 3 1.75200- 1 2.29000- 49541 2151  168
 6.68740+ 1 2.50000+ 0 1.74234- 1 2.10500- 3 1.71900- 1 2.29000- 49541 2151  169
 6.85250+ 1 2.50000+ 0 4.44300- 2 4.31000- 4 4.37700- 2 2.29000- 49541 2151  170
 6.95850+ 1 2.50000+ 0 4.51150- 2 1.11600- 3 4.37700- 2 2.29000- 49541 2151  171
 6.98240+ 1 2.50000+ 0 4.66600- 2 2.66100- 3 4.37700- 2 2.29000- 49541 2151  172
 7.12530+ 1 2.50000+ 0 4.45820- 2 5.83000- 4 4.37700- 2 2.29000- 49541 2151  173
 7.14630+ 1 2.50000+ 0 4.51080- 2 1.10900- 3 4.37700- 2 2.29000- 49541 2151  174
 7.18410+ 1 2.50000+ 0 4.50330- 2 1.03400- 3 4.37700- 2 2.29000- 49541 2151  175
 7.22760+ 1 2.50000+ 0 4.42250- 2 2.26000- 4 4.37700- 2 2.29000- 49541 2151  176
 7.49690+ 1 2.50000+ 0 4.44800- 2 4.81000- 4 4.37700- 2 2.29000- 49541 2151  177
 7.57150+ 1 2.50000+ 0 4.43770- 2 3.78000- 4 4.37700- 2 2.29000- 49541 2151  178
 7.59430+ 1 2.50000+ 0 4.45140- 2 5.15000- 4 4.37700- 2 2.29000- 49541 2151  179
 7.67790+ 1 2.50000+ 0 4.41080- 2 1.09000- 4 4.37700- 2 2.29000- 49541 2151  180
 7.81910+ 1 2.50000+ 0 1.20150- 2 1.48600- 3 1.03000- 2 2.29000- 49541 2151  181
 7.85510+ 1 2.50000+ 0 6.22080- 2 1.17900- 3 6.08000- 2 2.29000- 49541 2151  182
 7.95550+ 1 2.50000+ 0 4.47290- 2 7.30000- 4 4.37700- 2 2.29000- 49541 2151  183
 8.00500+ 1 2.50000+ 0 4.45450- 2 5.46000- 4 4.37700- 2 2.29000- 49541 2151  184
 8.03930+ 1 2.50000+ 0 4.45870- 2 5.88000- 4 4.37700- 2 2.29000- 49541 2151  185
 8.10770+ 1 2.50000+ 0 4.41050- 2 1.06000- 4 4.37700- 2 2.29000- 49541 2151  186
 8.14580+ 1 2.50000+ 0 1.05871- 1 1.04200- 3 1.04600- 1 2.29000- 49541 2151  187
 8.20890+ 1 2.50000+ 0 2.83830- 2 1.45400- 3 2.67000- 2 2.29000- 49541 2151  188
 8.29000+ 1 2.50000+ 0 4.44380- 2 4.39000- 4 4.37700- 2 2.29000- 49541 2151  189
 8.33700+ 1 2.50000+ 0 4.44300- 2 4.31000- 4 4.37700- 2 2.29000- 49541 2151  190
 8.40060+ 1 2.50000+ 0 3.97850- 2 1.45600- 3 3.81000- 2 2.29000- 49541 2151  191
 8.46850+ 1 2.50000+ 0 4.61400- 2 2.14100- 3 4.37700- 2 2.29000- 49541 2151  192
 8.66100+ 1 2.50000+ 0 4.42240- 2 2.25000- 4 4.37700- 2 2.29000- 49541 2151  193
 8.74810+ 1 2.50000+ 0 4.41250- 2 1.26000- 4 4.37700- 2 2.29000- 49541 2151  194
 8.79840+ 1 2.50000+ 0 7.48469- 2 3.91800- 3 7.07000- 2 2.29000- 49541 2151  195
 8.92970+ 1 2.50000+ 0 4.43310- 2 3.32000- 4 4.37700- 2 2.29000- 49541 2151  196
 8.96020+ 1 2.50000+ 0 8.92929- 2 2.36400- 3 8.67000- 2 2.29000- 49541 2151  197
 9.34120+ 1 2.50000+ 0 6.02250- 2 6.29600- 3 5.37000- 2 2.29000- 49541 2151  198
 9.46100+ 1 2.50000+ 0 4.47530- 2 7.54000- 4 4.37700- 2 2.29000- 49541 2151  199
 9.52850+ 1 2.50000+ 0 4.43590- 2 3.60000- 4 4.37700- 2 2.29000- 49541 2151  200
 9.56860+ 1 2.50000+ 0 4.68620- 2 2.86300- 3 4.37700- 2 2.29000- 49541 2151  201
 9.61000+ 1 2.50000+ 0 4.69050- 2 2.90600- 3 4.37700- 2 2.29000- 49541 2151  202
 9.64600+ 1 2.50000+ 0 4.68330- 2 2.83400- 3 4.37700- 2 2.29000- 49541 2151  203
 9.74230+ 1 2.50000+ 0 4.42760- 2 2.77000- 4 4.37700- 2 2.29000- 49541 2151  204
 9.83560+ 1 2.50000+ 0 4.42640- 2 2.65000- 4 4.37700- 2 2.29000- 49541 2151  205
 1.00156+ 2 2.50000+ 0 4.50740- 2 1.07500- 3 4.37700- 2 2.29000- 49541 2151  206
 1.01598+ 2 2.50000+ 0 5.41540- 2 2.82500- 3 5.11000- 2 2.29000- 49541 2151  207
 1.02555+ 2 2.50000+ 0 4.42470- 2 2.48000- 4 4.37700- 2 2.29000- 49541 2151  208
 1.03203+ 2 2.50000+ 0 4.74090- 2 6.98000- 3 4.02000- 2 2.29000- 49541 2151  209
 1.04788+ 2 2.50000+ 0 4.26250- 2 2.19600- 3 4.02000- 2 2.29000- 49541 2151  210
 1.06148+ 2 2.50000+ 0 5.08230- 2 6.82400- 3 4.37700- 2 2.29000- 49541 2151  211
 1.06396+ 2 2.50000+ 0 4.73510- 2 3.35200- 3 4.37700- 2 2.29000- 49541 2151  212
 1.07615+ 2 2.50000+ 0 4.59240- 2 1.92500- 3 4.37700- 2 2.29000- 49541 2151  213
 1.09824+ 2 2.50000+ 0 4.72550- 2 3.25600- 3 4.37700- 2 2.29000- 49541 2151  214
```

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT  SEQ
 1.10093+ 2 2.50000+ 0 4.73360- 2 3.33700- 3 4.37700- 2 2.29000- 49541 2151  215
 1.11170+ 2 2.50000+ 0 4.43730- 2 3.74000- 4 4.37700- 2 2.29000- 49541 2151  216
 1.11627+ 2 2.50000+ 0 9.97289- 2 5.20000- 3 9.43000- 2 2.29000- 49541 2151  217
 1.12752+ 2 2.50000+ 0 4.44130- 2 4.14000- 4 4.37700- 2 2.29000- 49541 2151  218
 1.13280+ 2 2.50000+ 0 4.42990- 2 3.00000- 4 4.37700- 2 2.29000- 49541 2151  219
 1.13907+ 2 2.50000+ 0 7.95699- 2 1.74100- 3 7.76000- 2 2.29000- 49541 2151  220
 1.15084+ 2 2.50000+ 0 8.13289- 2 1.80000- 3 7.93000- 2 2.29000- 49541 2151  221
 1.15777+ 2 2.50000+ 0 4.47000- 2 7.01000- 4 4.37700- 2 2.29000- 49541 2151  222
 1.16396+ 2 2.50000+ 0 4.48520- 2 2.62300- 3 4.20000- 2 2.29000- 49541 2151  223
 1.17656+ 2 2.50000+ 0 4.40290- 2 3.00000- 5 4.37700- 2 2.29000- 49541 2151  224
 1.18522+ 2 2.50000+ 0 4.48050- 2 8.06000- 4 4.37700- 2 2.29000- 49541 2151  225
 1.19823+ 2 2.50000+ 0 4.62360- 2 2.23700- 3 4.37700- 2 2.29000- 49541 2151  226
 1.20123+ 2 2.50000+ 0 4.59290- 2 1.93000- 3 4.37700- 2 2.29000- 49541 2151  227
 1.21982+ 2 2.50000+ 0 4.03450- 2 3.21600- 3 3.69000- 2 2.29000- 49541 2151  228
 1.22662+ 2 2.50000+ 0 6.83219- 2 3.89300- 3 6.42000- 2 2.29000- 49541 2151  229
 1.23283+ 2 2.50000+ 0 6.00630- 2 3.53400- 3 5.63000- 2 2.29000- 49541 2151  230
 1.24946+ 2 2.50000+ 0 4.56390- 2 1.64000- 3 4.37700- 2 2.29000- 49541 2151  231
 1.25819+ 2 2.50000+ 0 4.50340- 2 1.03500- 3 4.37700- 2 2.29000- 49541 215   232
 1.26441+ 2 2.50000+ 0 4.60340- 2 2.03500- 3 4.37700- 2 2.29000- 49541 2151  233
 1.27415+ 2 2.50000+ 0 4.42490- 2 2.50000- 4 4.37700- 2 2.29000- 49541 2151  234
 1.27994+ 2 2.50000+ 0 4.56870- 2 1.68800- 3 4.37700- 2 2.29000- 49541 2151  235
 1.29677+ 2 2.50000+ 0 4.42240- 2 2.25000- 4 4.37700- 2 2.29000- 49541 2151  236
 1.30720+ 2 2.50000+ 0 4.53570- 2 1.35800- 3 4.37700- 2 2.29000- 49541 2151  237
 1.31319+ 2 2.50000+ 0 5.93500- 2 3.12100- 3 5.60000- 2 2.29000- 49541 2151  238
 1.32180+ 2 2.50000+ 0 4.48740- 2 8.75000- 4 4.37700- 2 2.29000- 49541 2151  239
 1.32754+ 2 2.50000+ 0 4.51790- 2 1.18000- 3 4.37700- 2 2.29000- 49541 2151  240
 1.33657+ 2 2.50000+ 0 5.41130- 2 1.78400- 3 5.21000- 2 2.29000- 49541 2151  241
 1.34867+ 2 2.50000+ 0 5.20140- 2 8.01500- 3 4.37700- 2 2.29000- 49541 2151  242
 1.35449+ 2 2.50000+ 0 4.81300- 2 4.13100- 3 4.37700- 2 2.29000- 49541 2151  243
 1.36435+ 2 2.50000+ 0 5.16860- 2 5.75700- 3 4.57000- 2 2.29000- 49541 2151  244
 1.37103+ 2 2.50000+ 0 4.52930- 2 1.29400- 3 4.37700- 2 2.29000- 49541 2151  245
 1.37613+ 2 2.50000+ 0 4.56270- 2 1.62800- 3 4.37700- 2 2.29000- 49541 2151  246
 1.38774+ 2 2.50000+ 0 4.47150- 2 3.88600- 3 4.06000- 2 2.29000- 49541 2151  247
 1.39963+ 2 2.50000+ 0 4.52520- 2 1.25300- 3 4.37700- 2 2.29000- 49541 2151  248
 1.40498+ 2 2.50000+ 0 4.64350- 2 2.43600- 3 4.37700- 2 2.29000- 49541 2151  249
 1.41310+ 2 2.50000+ 0 4.82280- 2 4.22900- 3 4.37700- 2 2.29000- 49541 2151  250
 1.41520+ 2 2.50000+ 0 4.72550- 2 3.25600- 3 4.37700- 2 2.29000- 49541 2151  251
 1.43036+ 2 2.50000+ 0 4.43300- 2 3.31000- 4 4.37700- 2 2.29000- 49541 2151  252
 1.44869+ 2 2.50000+ 0 4.54200- 2 1.42100- 3 4.37700- 2 2.29000- 49541 2151  253
 1.45438+ 2 2.50000+ 0 4.43490- 2 3.50000- 4 4.37700- 2 2.29000- 49541 2151  254
 1.46436+ 2 2.50000+ 0 4.57380- 2 1.73900- 3 4.37700- 2 2.29000- 49541 2151  255
 1.48031+ 2 2.50000+ 0 5.63010- 2 1.23020- 2 4.37700- 2 2.29000- 49541 2151  256
 1.49141+ 2 2.50000+ 0 4.79250- 2 3.92600- 3 4.37700- 2 2.29000- 49541 2151  257
 1.50000+ 2 3.00000+ 4          2          2          0          09541 2151  258
 2.50000+ 0 9.37000- 1          0          0          2          09541 2151  259
 2.38990+ 2 0.0     + 0          0          0          2          09541 2151  260
 2.00000+ 0 0.0     + 0          2          0        168         279541 2151  261
0.0     + 0 0.0     + 0 0.0     + 0 1.00000+ 0 0.0     + 0 1.00000+ 09541 2151  262
 1.50000+ 2 1.03780+ 0 0.0     + 0 1.00750- 4 4.37700- 2 4.97820- 49541 2151  263
 1.75000+ 2 1.03780+ 0 0.0     + 0 8.14260- 5 4.37700- 2 6.07890- 49541 2151  264
 2.50000+ 2 1.03760+ 0 0.0     + 0 9.63770- 5 4.37700- 2 4.45510- 49541 2151  265
 3.50000+ 2 1.03740+ 0 0.0     + 0 1.02640- 4 4.37700- 2 6.07180- 49541 2151  266
 4.50000+ 2 1.03730+ 0 0.0     + 0 1.06580- 4 4.37700- 2 4.26000- 49541 2151  267
 5.50000+ 2 1.03710+ 0 0.0     + 0 9.15770- 5 4.37700- 2 4.61750- 49541 2151  268
 7.00000+ 2 1.03680+ 0 0.0     + 0 1.04010- 4 4.37700- 2 4.61970- 49541 2151  269
```

```
........10........20........30........40........50........60......MAT MF MT  SEQ
 9.00000+ 2 1.03640+ 0 0.0     + 0 8.87140- 5 4.37700- 2 3.65320- 49541 2151  270
 1.10000+ 3 1.03600+ 0 0.0     + 0 9.37130- 5 4.37700- 2 5.85380- 49541 2151  271
 1.25000+ 3 1.03570+ 0 0.0     + 0 1.04270- 4 4.37700- 2 3.93070- 49541 2151  272
 1.50000+ 3 1.03530+ 0 0.0     + 0 1.03880- 4 4.37700- 2 3.54310- 49541 2151  273
 1.75000+ 3 1.03480+ 0 0.0     + 0 1.00220- 4 4.37700- 2 2.93090- 49541 2151  274
 2.00000+ 3 1.03430+ 0 0.0     + 0 1.02920- 4 4.37700- 2 2.54340- 49541 2151  275
 2.25000+ 3 1.03390+ 0 0.0     + 0 1.04740- 4 4.37700- 2 3.56400- 49541 2151  276
 3.00000+ 3 1.03240+ 0 0.0     + 0 1.07040- 4 4.37700- 2 3.90150- 49541 2151  277
 3.50000+ 3 1.03150+ 0 0.0     + 0 1.02520- 4 4.37700- 2 3.15850- 49541 2151  278
 4.50000+ 3 1.02960+ 0 0.0     + 0 9.90800- 5 4.37700- 2 3.58080- 49541 2151  279
 5.00000+ 3 1.02870+ 0 0.0     + 0 1.03090- 4 4.37700- 2 4.37540- 49541 2151  280
 6.00000+ 3 1.02680+ 0 0.0     + 0 1.04830- 4 4.37700- 2 4.44100- 49541 2151  281
 7.00000+ 3 1.02490+ 0 0.0     + 0 1.00480- 4 4.37700- 2 3.93760- 49541 2151  282
 8.00000+ 3 1.02310+ 0 0.0     + 0 9.49580- 5 4.37700- 2 5.85410- 49541 2151  283
 9.00000+ 3 1.02120+ 0 0.0     + 0 9.47960- 5 4.37700- 2 1.16880- 39541 2151  284
 1.00000+ 4 1.01930+ 0 0.0     + 0 9.67130- 5 4.37700- 2 4.35260- 49541 2151  285
 1.25000+ 4 1.01470+ 0 0.0     + 0 9.84730- 5 4.37700- 2 2.93130- 49541 2151  286
 1.75000+ 4 1.00550+ 0 0.0     + 0 1.04310- 4 4.37700- 2 2.15090- 49541 2151  287
 2.00000+ 4 1.00090+ 0 0.0     + 0 8.95170- 5 4.37700- 2 2.41510- 49541 2151  288
 3.00000+ 4 9.82790- 1 0.0     + 0 9.28590- 5 4.37700- 2 2.45890- 49541 2151  289
 3.00000+ 0 0.0     + 0           2           0          168          279541 2151  290
 0.0      + 0 0.0     + 0 0.0     + 0 1.00000+ 0 0.0     + 0 1.00000+ 09541 2151  291
 1.50000+ 2 7.41300- 1 0.0     + 0 7.19630- 5 4.37700- 2 4.97820- 49541 2151  292
 1.75000+ 2 7.41260- 1 0.0     + 0 5.81620- 5 4.37700- 2 6.07890- 49541 2151  293
 2.50000+ 2 7.41170- 1 0.0     + 0 6.88400- 5 4.37700- 2 4.45510- 49541 2151  294
 3.50000+ 2 7.41030- 1 0.0     + 0 7.33110- 5 4.37700- 2 6.07180- 49541 2151  295
 4.50000+ 2 7.40900- 1 0.0     + 0 7.61280- 5 4.37700- 2 4.26000- 49541 2151  296
 5.50000+ 2 7.40760- 1 0.0     + 0 6.54120- 5 4.37700- 2 4.61750- 49541 2151  297
 7.00000+ 2  40560- 1 0.0      + 0 7.42960- 5 4.37700- 2 4.61970- 49541 2151  298
 9.00000+ 2 7.40280- 1 0.0     + 0 6.33670- 5 4.37700- 2 3.65320- 49541 2151  299
 1.10000+ 3 7.40020- 1 0.0     + 0 6.69380- 5 4.37700- 2 5.85380- 49541 2151  300
 1.25000+ 3 7.39810- 1 0.0     + 0 7.44770- 5 4.37700- 2 3.93070- 49541 2151  301
 1.50000+ 3 7.39470- 1 0.0     + 0 7.41980- 5 4.37700- 2 3.54310- 49541 2151  302
 1.75000+ 3 7.39130- 1 0.0     + 0 7.15890- 5 4.37700- 2 2.93090- 49541 2151  303
 2.00000+ 3 7.38800- 1 0.0     + 0 7.35110- 5 4.37700- 2 2.54340- 49541 2151  304
 2.25000+ 3 7.38470- 1 0.0     + 0 7.48170- 5 4.37700- 2 3.56400- 49541 2151  305
 3.00000+ 3 7.37450- 1 0.0     + 0 7.64570- 5 4.37700- 2 3.90150- 49541 2151  306
 3.50000+ 3 7.36780- 1 0.0     + 0 7.32270- 5 4.37700- 2 3.15850- 49541 2151  307
 4.50000+ 3 7.35430- 1 0.0     + 0 7.07710- 5 4.37700- 2 3.58080- 49541 2151  308
 5.00000+ 3 7.34770- 1 0.0     + 0 7.36360- 5 4.37700- 2 4.37540- 49541 2151  309
 6.00000+ 3 7.33420- 1 0.0     + 0 7.48790- 5 4.37700- 2 4.44100- 49541 2151  310
 7.00000+ 3 7.32080- 1 0.0     + 0 7.17720- 5 4.37700- 2 3.93760- 49541 2151  311
 8.00000+ 3 7.30750- 1 0.0     + 0 6.78270- 5 4.37700- 2 5.85410- 49541 2151  312
 9.00000+ 3 7.29410- 1 0.0     + 0 6.77110- 5 4.37700- 2 1.16880- 39541 2151  313
 1.00000+ 4 7.28080- 1 0.0     + 0 6.90810- 5 4.37700- 2 4.35260- 49541 2151  314
 1.25000+ 4 7.24770- 1 0.0     + 0 7.03380- 5 4.37700- 2 2.93130- 49541 2151  315
 1.75000+ 4 7.18190- 1 0.0     + 0 7.45080- 5 4.37700- 2 2.15090- 49541 2151  316
 2.00000+ 4 7.14920- 1 0.0     + 0 6.39410- 5 4.37700- 2 2.41510- 49541 2151  317
 3.00000+ 4 7.01990- 1 0.0     + 0 6.63280- 5 4.37700- 2 2.45890- 49541 2151  318
 2.38990+ 2 0.0     + 0           1           0          4            09541 2151  319
 1.00000+ 0 0.0     + 0           2           0        168          279541 2151  320
 0.0      + 0 0.0     + 0 0.0     + 0 1.00000+ 0 0.0     + 0 1.00000+ 09541 2151  321
 1.50000+ 2 1.72970+ 0 0.0     + 0 3.94170- 4 4.37700- 2 4.97820- 49541 2151  322
 1.75000+ 2 1.72960+ 0 0.0     + 0 3.18580- 4 4.37700- 2 6.07890- 49541 2151  323
 2.50000+ 2 1.72940+ 0 0.0     + 0 3.77070- 4 4.37700- 2 4.45510- 49541 2151  324
```

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT  SEQ
 3.50000+ 2 1.72910+ 0 0.0    + 0 4.01560- 4 4.37700- 2 6.07180- 49541 2151  325
 4.50000+ 2 1.72880+ 0 0.0    + 0 4.16980- 4 4.37700- 2 4.26000- 49541 2151  326
 5.50000+ 2 1.72850+ 0 0.0    + 0 3.58290- 4 4.37700- 2 4.61750- 49541 2151  327
 7.00000+ 2 1.72800+ 0 0.0    + 0 4.06950- 4 4.37700- 2 4.61970- 49541 2151  328
 9.00000+ 2 1.72730+ 0 0.0    + 0 3.47090- 4 4.37700- 2 3.65320- 49541 2151  329
 1.10000+ 3 1.72670+ 0 0.0    + 0 3.66650- 4 4.37700- 2 5.85380- 49541 2151  330
 1.25000+ 3 1.72620+ 0 0.0    + 0 4.07940- 4 4.37700- 2 3.93070- 49541 2151  331
 1.50000+ 3 1.72540+ 0 0.0    + 0 4.06420- 4 4.37700- 2 3.54310- 49541 2151  332
 1.75000+ 3 1.72460+ 0 0.0    + 0 3.92120- 4 4.37700- 2 2.93090- 49541 2151  333
 2.00000+ 3 1.72390+ 0 0.0    + 0 4.02650- 4 4.37700- 2 2.54340- 49541 2151  334
 2.25000+ 3 1.72310+ 0 0.0    + 0 4.09810- 4 4.37700- 2 3.56400- 49541 2151  335
 3.00000+ 3 1.72070+ 0 0.0    + 0 4.18790- 4 4.37700- 2 3.90150- 49541 2151  336
 3.50000+ 3 1.71920+ 0 0.0    + 0 4.01100- 4 4.37700- 2 3.15850- 49541 2151  337
 4.50000+ 3 1.71600+ 0 0.0    + 0 3.87640- 4 4.37700- 2 3.58080- 49541 2151  338
 5.00000+ 3 1.71450+ 0 0.0    + 0 4.03340- 4 4.37700- 2 4.37540- 49541 2151  339
 6.00000+ 3 1.71130+ 0 0.0    + 0 4.10150- 4 4.37700- 2 4.44100- 49541 2151  340
 7.00000+ 3 1.70820+ 0 0.0    + 0 3.93120- 4 4.37700- 2 3.93760- 49541 2151  341
 8.00000+ 3 1.70510+ 0 0.0    + 0 3.71520- 4 4.37700- 2 5.85410- 49541 2151  342
 9.00000+ 3 1.70200+ 0 0.0    + 0 3.70880- 4 4.37700- 2 1.16880- 39541 2151  343
 1.00000+ 4 1.69890+ 0 0.0    + 0 3.78380- 4 4.37700- 2 4.35260- 49541 2151  344
 1.25000+ 4 1.69110+ 0 0.0    + 0 3.85270- 4 4.37700- 2 2.93130- 49541 2151  345
 1.75000+ 4 1.67580+ 0 0.0    + 0 4.08110- 4 4.37700- 2 2.15090- 49541 2151  346
 2.00000+ 4 1.66810+ 0 0.0    + 0 3.50230- 4 4.37700- 2 2.41510- 49541 2151  347
 3.00000+ 4 1.63800+ 0 0.0    + 0 3.63300- 4 4.37700- 2 2.45890- 49541 2151  348
 2.00000+ 0 0.0    + 0          2          0          168          279541 2151  349
0.0    + 0 0.0    + 0 0.0    + 0 2.00000+ 0 0.0    + 0 1.00000+ 09541 2151  350
 1.50000+ 2 1.03780+ 0 0.0    + 0 2.36500- 4 4.37700- 2 4.97820- 49541 2151  351
 1.75000+ 2 1.03780+ 0 0.0    + 0 1.91150- 4 4.37700- 2 6.07890- 49541 2151  352
 2.50000+ 2 1.03760+ 0 0.0    + 0 2.26240- 4 4.37700- 2 4.45510- 49541 2151  353
 3.50000+ 2 1.03740+ 0 0.0    + 0 2.40930- 4 4.37700- 2 6.07180- 49541 2151  354
 4.50000+ 2 1.03730+ 0 0.0    + 0 2.50190- 4 4.37700- 2 4.26000- 49541 2151  355
 5.50000+ 2 1.03710+ 0 0.0    + 0 2.14970- 4 4.37700- 2 4.61750- 49541 2151  356
 7.00000+ 2 1.03680+ 0 0.0    + 0 2.44170- 4 4.37700- 2 4.61970- 49541 2151  357
 9.00000+ 2 1.03640+ 0 0.0    + 0 2.08250- 4 4.37700- 2 3.65320- 49541 2151  358
 1.10000+ 3 1.03600+ 0 0.0    + 0 2.19990- 4 4.37700- 2 5.85380- 49541 2151  359
 1.25000+ 3 1.03570+ 0 0.0    + 0 2.44770- 4 4.37700- 2 3.93070- 49541 2151  360
 1.50000+ 3 1.03530+ 0 0.0    + 0 2.43850- 4 4.37700- 2 3.54310- 49541 2151  361
 1.75000+ 3 1.03480+ 0 0.0    + 0 2.35270- 4 4.37700- 2 2.93090- 49541 2151  362
 2.00000+ 3 1.03430+ 0 0.0    + 0 2.41590- 4 4.37700- 2 2.54340- 49541 2151  363
 2.25000+ 3 1.03390+ 0 0.0    + 0 2.45880- 4 4.37700- 2 3.56400- 49541 2151  364
 3.00000+ 3 1.03240+ 0 0.0    + 0 2.51270- 4 4.37700- 2 3.90150- 49541 2151  365
 3.50000+ 3 1.03150+ 0 0.0    + 0 2.40660- 4 4.37700- 2 3.15850- 49541 2151  366
 4.50000+ 3 1.02960+ 0 0.0    + 0 2.32590- 4 4.37700- 2 3.58080- 49541 2151  367
 5.00000+ 3 1.02870+ 0 0.0    + 0 2.42000- 4 4.37700- 2 4.37540- 49541 2151  368
 6.00000+ 3 1.02680+ 0 0.0    + 0 2.46090- 4 4.37700- 2 4.44100- 49541 2151  369
 7.00000+ 3 1.02490+ 0 0.0    + 0 2.35870- 4 4.37700- 2 3.93760- 49541 2151  370
 8.00000+ 3 1.02310+ 0 0.0    + 0 2.22910- 4 4.37700- 2 5.85410- 49541 2151  371
 9.00000+ 3 1.02120+ 0 0.0    + 0 2.22530- 4 4.37700- 2 1.16880- 39541 2151  372
 1.00000+ 4 1.01930+ 0 0.0    + 0 2.27030- 4 4.37700- 2 4.35260- 49541 2151  373
 1.25000+ 4 1.01470+ 0 0.0    + 0 2.31160- 4 4.37700- 2 2.93130- 49541 2151  374
 1.75000+ 4 1.00550+ 0 0.0    + 0 2.44870- 4 4.37700- 2 2.15090- 49541 2151  375
 2.00000+ 4 1.00090+ 0 0.0    + 0 2.10140- 4 4.37700- 2 2.41510- 49541 2151  376
 3.00000+ 4 9.82790- 1 0.0    + 0 2.17980- 4 4.37700- 2 2.45890- 49541 2151  377
 3.00000+ 0 0.0    + 0          2          0          168          279541 2151  378
0.0    + 0 0.0    + 0 0.0    + 0 2.00000+ 0 0.0    + 0 1.00000+ 09541 2151  379
```

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT  SEQ
 1.50000+ 2 7.41300- 1 0.0    + 0 1.68930- 4 4.37700- 2 4.97820- 49541 2151  380
 1.75000+ 2 7.41260- 1 0.0    + 0 1.36530- 4 4.37700- 2 6.07890- 49541 2151  381
 2.50000+ 2 7.41170- 1 0.0    + 0 1.61600- 4 4.37700- 2 4.45510- 49541 2151  382
 3.50000+ 2 7.41030- 1 0.0    + 0 1.72100- 4 4.37700- 2 6.07180- 49541 2151  383
 4.50000+ 2 7.40900- 1 0.0    + 0 1.78710- 4 4.37700- 2 4.26000- 49541 2151  384
 5.50000+ 2 7.40760- 1 0.0    + 0 1.53550- 4 4.37700- 2 4.61750- 49541 2151  385
 7.00000+ 2 7.40560- 1 0.0    + 0 1.74410- 4 4.37700- 2 4.61970- 49541 2151  386
 9.00000+ 2 7.40280- 1 0.0    + 0 1.48750- 4 4.37700- 2 3.65320- 49541 2151  387
 1.10000+ 3 7.40020- 1 0.0    + 0 1.57130- 4 4.37700- 2 5.85380- 49541 2151  388
 1.25000+ 3 7.39810- 1 0.0    + 0 1.74830- 4 4.37700- 2 3.93070- 49541 2151  389
 1.50000+ 3 7.39470- 1 0.0    + 0 1.74180- 4 4.37700- 2 3.54310- 49541 2151  390
 1.75000+ 3 7.39130- 1 0.0    + 0 1.68050- 4 4.37700- 2 2.93090- 49541 2151  391
 2.00000+ 3 7.38800- 1 0.0    + 0 1.72560- 4 4.37700- 2 2.54340- 49541 2151  392
 2.25000+ 3 7.38470- 1 0.0    + 0 1.75630- 4 4.37700- 2 3.56400- 49541 2151  393
 3.00000+ 3 7.37450- 1 0.0    + 0 1.79480- 4 4.37700- 2 3.90150- 49541 2151  394
 3.50000+ 3 7.36780- 1 0.0    + 0 1.71900- 4 4.37700- 2 3.15850- 49541 2151  395
 4.50000+ 3 7.35430- 1 0.0    + 0 1.66130- 4 4.37700- 2 3.58080- 49541 2151  396
 5.00000+ 3 7.34770- 1 0.0    + 0 1.72860- 4 4.37700- 2 4.37540- 49541 2151  397
 6.00000+ 3 7.33420- 1 0.0    + 0 1.75780- 4 4.37700- 2 4.44100- 49541 2151  398
 7.00000+ 3 7.32080- 1 0.0    + 0 1.68480- 4 4.37700- 2 3.93760- 49541 2151  399
 8.00000+ 3 7.30750- 1 0.0    + 0 1.59220- 4 4.37700- 2 5.85410- 49541 2151  400
 9.00000+ 3 7.29410- 1 0.0    + 0 1.58950- 4 4.37700- 2 1.16880- 39541 2151  401
 1.00000+ 4 7.28080- 1 0.0    + 0 1.62160- 4 4.37700- 2 4.35260- 49541 2151  402
 1.25000+ 4 7.24770- 1 0.0    + 0 1.65120- 4 4.37700- 2 2.93130- 49541 2151  403
 1.75000+ 4 7.18190- 1 0.0    + 0 1.74900- 4 4.37700- 2 2.15090- 49541 2151  404
 2.00000+ 4 7.14920- 1 0.0    + 0 1.50100- 4 4.37700- 2 2.41510- 49541 2151  405
 3.00000+ 4 7.01990- 1 0.0    + 0 1.55700- 4 4.37700- 2 2.45890- 49541 2151  406
 4.00000+ 0 0.0     + 0          2          0          168          279541 2151  407
 0.0      + 0 0.0     + 0 0.0     + 0 1.00000+ 0 0.0     + 0 1.00000+ 09541 2151  408
 1.50000+ 2 5.76570- 1 0.0    + 0 1.31390- 4 4.37700- 2 4.97820- 49541 2151  409
 1.75000+ 2 5.76540- 1 0.0    + 0 1.06190- 4 4.37700- 2 6.07890- 49541 2151  410
 2.50000+ 2 5.76470- 1 0.0    + 0 1.25690- 4 4.37700- 2 4.45510- 49541 2151  411
 3.50000+ 2 5.76360- 1 0.0    + 0 1.33850- 4 4.37700- 2 6.07180- 49541 2151  412
 4.50000+ 2 5.76250- 1 0.0    + 0 1.38990- 4 4.37700- 2 4.26000- 49541 2151  413
 5.50000+ 2 5.76150- 1 0.0    + 0 1.19430- 4 4.37700- 2 4.61750- 49541 2151  414
 7.00000+ 2 5.75990- 1 0.0    + 0 1.35650- 4 4.37700- 2 4.61970- 49541 2151  415
 9.00000+ 2 5.75780- 1 0.0    + 0 1.15700- 4 4.37700- 2 3.65320- 49541 2151  416
 1.10000+ 3 5.75570- 1 0.0    + 0 1.22220- 4 4.37700- 2 5.85380- 49541 2151  417
 1.25000+ 3 5.75410- 1 0.0    + 0 1.35980- 4 4.37700- 2 3.93070- 49541 2151  418
 1.50000+ 3 5.75140- 1 0.0    + 0 1.35470- 4 4.37700- 2 3.54310- 49541 2151  419
 1.75000+ 3 5.74880- 1 0.0    + 0 1.30710- 4 4.37700- 2 2.93090- 49541 2151  420
 2.00000+ 3 5.74630- 1 0.0    + 0 1.34220- 4 4.37700- 2 2.54340- 49541 2151  421
 2.25000+ 3 5.74360- 1 0.0    + 0 1.36600- 4 4.37700- 2 3.56400- 49541 2151  422
 3.00000+ 3 5.73570- 1 0.0    + 0 1.39600- 4 4.37700- 2 3.90150- 49541 2151  423
 3.50000+ 3 5.73050- 1 0.0    + 0 1.33700- 4 4.37700- 2 3.15850- 49541 2151  424
 4.50000+ 3 5.72000- 1 0.0    + 0 1.29210- 4 4.37700- 2 3.58080- 49541 2151  425
 5.00000+ 3 5.71490- 1 0.0    + 0 1.34450- 4 4.37700- 2 4.37540- 49541 2151  426
 6.00000+ 3 5.70440- 1 0.0    + 0 1.36720- 4 4.37700- 2 4.44100- 49541 2151  427
 7.00000+ 3 5.69400- 1 0.0    + 0 1.31040- 4 4.37700- 2 3.93760- 49541 2151  428
 8.00000+ 3 5.68360- 1 0.0    + 0 1.23840- 4 4.37700- 2 5.85410- 49541 2151  429
 9.00000+ 3 5.67320- 1 0.0    + 0 1.23630- 4 4.37700- 2 1.16880- 39541 2151  430
 1.00000+ 4 5.66290- 1 0.0    + 0 1.26130- 4 4.37700- 2 4.35260- 49541 2151  431
 1.25000+ 4 5.63710- 1 0.0    + 0 1.28420- 4 4.37700- 2 2.93130- 49541 2151  432
 1.75000+ 4 5.58590- 1 0.0    + 0 1.36040- 4 4.37700- 2 2.15090- 49541 2151  433
 2.00000+ 4 5.56050- 1 0.0    + 0 1.16740- 4 4.37700- 2 2.41510- 49541 2151  434
```

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT  SEQ
 3.00000+ 4 5.45990- 1 0.0     + 0 1.21100- 4 4.37700- 2 2.45890- 49541 2151  435
                                                                   9541 2  0  436
                                                                   9541 0  0  437
 9.52410+ 4 2.38986+ 2           0           99           0          09541 3  1  438
 0.0      + 0 0.0     + 0           0            0           2         689541 3  1  439
          3              2          68           5           0          09541 3  1  440
 1.00000- 5 0.0     + 0 2.53000- 2 0.0     + 0 3.00000+ 4 0.0     + 09541 3  1  441
 3.00000+ 4 1.39349+ 1 4.00000+ 4 1.36328+ 1 4.13724+ 4 1.35983+ 19541 3  1  442
 5.00000+ 4 1.34052+ 1 6.00000+ 4 1.32168+ 1 7.00000+ 4 1.30508+ 19541 3  1  443
 9.00000+ 4 1.27571+ 1 9.39917+ 4 1.27023+ 1 1.00000+ 5 1.26216+ 19541 3  1  444
 1.25000+ 5 1.23022+ 1 1.50000+ 5 1.20008+ 1 1.58661+ 5 1.18995+ 19541 3  1  445
 1.75000+ 5 1.17122+ 1 2.00000+ 5 1.14344+ 1 2.06762+ 5 1.13610+ 19541 3  1  446
 2.34979+ 5 1.10623+ 1 2.50000+ 5 1.09083+ 1 2.72134+ 5 1.06878+ 19541 3  1  447
 3.00000+ 5 1.04212+ 1 3.20335+ 5 1.02339+ 1 3.50000+ 5 9.97207+ 09541 3  1  448
 3.76569+ 5 9.74892+ 0 4.00000+ 5 9.56091+ 0 4.73774+ 5 9.02172+ 09541 3  1  449
 5.00000+ 5 8.84884+ 0 5.06611+ 5 8.80678+ 0 5.51297+ 5 8.53854+ 09541 3  1  450
 6.00000+ 5 8.27602+ 0 6.25707+ 5 8.14955+ 0 6.39565+ 5 8.08474+ 09541 3  1  451
 6.54829+ 5 8.01602+ 0 6.55933+ 5 8.01116+ 0 6.73004+ 5 7.93777+ 09541 3  1  452
 7.00000+ 5 7.82852+ 0 7.35063+ 5 7.69862+ 0 8.00000+ 5 7.49159+ 09541 3  1  453
 9.00000+ 5 7.24881+ 0 1.00000+ 6 7.08303+ 0 1.10000+ 6 6.97792+ 09541 3  1  454
 1.20000+ 6 6.91871+ 0 1.30000+ 6 6.89307+ 0 1.40000+ 6 6.89125+ 09541 3  1  455
 1.60000+ 6 6.93352+ 0 2.00000+ 6 7.10276+ 0 2.20000+ 6 7.20395+ 09541 3  1  456
 2.50000+ 6 7.35885+ 0 2.85000+ 6 7.52700+ 0 3.00000+ 6 7.59048+ 09541 3  1  457
 4.00000+ 6 7.79799+ 0 4.25000+ 6 7.78754+ 0 5.00000+ 6 7.65729+ 09541 3  1  458
 6.00000+ 6 7.34001+ 0 6.30000+ 6 7.21209+ 0 6.61000+ 6 7.06661+ 09541 3  1  459
 7.00000+ 6 6.87325+ 0 7.50000+ 6 6.62688+ 0 8.00000+ 6 6.40089+ 09541 3  1  460
 8.35000+ 6 6.26067+ 0 8.50000+ 6 6.20577+ 0 9.00000+ 6 6.04639+ 09541 3  1  461
 1.00000+ 7 5.83188+ 0 1.10000+ 7 5.72500+ 0 1.20000+ 7 5.68417+ 09541 3  1  462
 1.40000+ 7 5.74149+ 0 2.00000+ 7 6.18838+ 0                      9541 3  1  463
                                                                   9541 3  0  464
 9.52410+ 4 2.38986+ 2           0           0            0          09541 3  2  465
 0.0      + 0 0.0     + 0           0           0            2         689541 3  2  466
          3              2          68           5           0          09541 3  2  467
 1.00000- 5 0.0     + 0 2.53000- 2 0.0     + 0 3.00000+ 4 0.0     + 09541 3  2  468
 3.00000+ 4 1.13962+ 1 4.00000+ 4 1.12602+ 1 4.13724+ 4 1.12445+ 19541 3  2  469
 5.00000+ 4 1.11215+ 1 6.00000+ 4 1.10099+ 1 7.00000+ 4 1.09038+ 19541 3  2  470
 9.00000+ 4 1.06954+ 1 9.39917+ 4 1.06538+ 1 1.00000+ 5 1.05887+ 19541 3  2  471
 1.25000+ 5 1.03061+ 1 1.50000+ 5 1.00206+ 1 1.58661+ 5 9.92252+ 09541 3  2  472
 1.75000+ 5 9.73742+ 0 2.00000+ 5 9.45891+ 0 2.06762+ 5 9.38490+ 09541 3  2  473
 2.34979+ 5 9.03112+ 0 2.50000+ 5 8.83974+ 0 2.72134+ 5 8.58719+ 09541 3  2  474
 3.00000+ 5 8.28238+ 0 3.20335+ 5 8.07607+ 0 3.50000+ 5 7.79200+ 09541 3  2  475
 3.76569+ 5 7.55243+ 0 4.00000+ 5 7.35140+ 0 4.73774+ 5 6.76693+ 09541 3  2  476
 5.00000+ 5 6.56674+ 0 5.06611+ 5 6.51678+ 0 5.51297+ 5 6.17709+ 09541 3  2  477
 6.00000+ 5 5.83278+ 0 6.25707+ 5 5.65744+ 0 6.39565+ 5 5.56557+ 09541 3  2  478
 6.54829+ 5 5.46701+ 0 6.55933+ 5 5.45983+ 0 6.73004+ 5 5.34869+ 09541 3  2  479
 7.00000+ 5 5.18294+ 0 7.35063+ 5 4.97573+ 0 8.00000+ 5 4.63792+ 09541 3  2  480
 9.00000+ 5 4.23031+ 0 1.00000+ 6 3.90987+ 0 1.10000+ 6 3.66763+ 09541 3  2  481
 1.20000+ 6 3.52266+ 0 1.30000+ 6 3.43097+ 0 1.40000+ 6 3.38720+ 09541 3  2  482
 1.60000+ 6 3.40029+ 0 2.00000+ 6 3.66531+ 0 2.20000+ 6 3.85295+ 09541 3  2  483
 2.50000+ 6 4.14535+ 0 2.85000+ 6 4.45487+ 0 3.00000+ 6 4.56862+ 09541 3  2  484
 4.00000+ 6 4.97995+ 0 4.25000+ 6 4.99393+ 0 5.00000+ 6 4.87639+ 09541 3  2  485
 6.00000+ 6 4.49538+ 0 6.30000+ 6 4.35706+ 0 6.61000+ 6 4.20885+ 09541 3  2  486
 7.00000+ 6 4.01955+ 0 7.50000+ 6 3.78117+ 0 8.00000+ 6 3.55771+ 09541 3  2  487
 8.35000+ 6 3.41452+ 0 8.50000+ 6 3.35705+ 0 9.00000+ 6 3.18394+ 09541 3  2  488
 1.00000+ 7 2.92666+ 0 1.10000+ 7 2.77821+ 0 1.20000+ 7 2.71106+ 09541 3  2  489
```

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT  SEQ
1.40000+ 7 2.72235+ 0 2.00000+ 7 3.02251+ 0                 9541 3  2  490
                                                            9541 3  0  491
9.52410+ 4 2.38986+ 2          0          99          0     09541 3  4  492
0.0     + 0-4.12000+ 4         0           0          1    639541 3  4  493
         63            3       0           0          0     09541 3  4  494
4.13724+ 4 0.0     + 0 5.00000+ 4 9.30624- 2 6.00000+ 4 1.51166- 19541 3  4  495
7.00000+ 4 2.05112- 1 9.00000+ 4 3.01061- 1 9.39917+ 4 3.18134- 19541 3  4  496
1.00000+ 5 3.50538- 1 1.25000+ 5 4.82639- 1 1.50000+ 5 5.90473- 19541 3  4  497
1.58661+ 5 6.21653- 1 1.75000+ 5 6.79060- 1 2.00000+ 5 7.51406- 19541 3  4  498
2.06762+ 5 7.67980- 1 2.34979+ 5 9.17880- 1 2.50000+ 5 1.00874+ 09541 3  4  499
2.72134+ 5 1.09479+ 0 3.00000+ 5 1.19233+ 0 3.20335+ 5 1.24268+ 09541 3  4  500
3.50000+ 5 1.30055+ 0 3.76569+ 5 1.33940+ 0 4.00000+ 5 1.36727+ 09541 3  4  501
4.73774+ 5 1.41887+ 0 5.00000+ 5 1.45027+ 0 5.06611+ 5 1.45679+ 09541 3  4  502
5.51297+ 5 1.52638+ 0 6.00000+ 5 1.60248+ 0 6.25707+ 5 1.61686+ 09541 3  4  503
6.39565+ 5 1.62557+ 0 6.54829+ 5 1.63593+ 0 6.55933+ 5 1.63706+ 09541 3  4  504
6.73004+ 5 1.65483+ 0 7.00000+ 5 1.67743+ 0 7.35063+ 5 1.65033+ 09541 3  4  505
8.00000+ 5 1.58517+ 0 9.00000+ 5 1.54740+ 0 1.00000+ 6 1.46256+ 09541 3  4  506
1.10000+ 6 1.30954+ 0 1.20000+ 6 1.31072+ 0 1.30000+ 6 1.29726+ 09541 3  4  507
1.40000+ 6 1.31949+ 0 1.60000+ 6 1.36056+ 0 2.00000+ 6 1.30738+ 09541 3  4  508
2.20000+ 6 1.21269+ 0 2.50000+ 6 1.09769+ 0 2.85000+ 6 1.03201+ 09541 3  4  509
3.00000+ 6 9.87241- 1 4.00000+ 6 7.71816- 1 4.25000+ 6 7.49158- 19541 3  4  510
5.00000+ 6 7.69069- 1 6.00000+ 6 9.23931- 1 6.30000+ 6 9.34513- 19541 3  4  511
6.61000+ 6 7.57462- 1 7.00000+ 6 5.49550- 1 7.50000+ 6 2.35670- 19541 3  4  512
8.00000+ 6 7.31733- 2 8.35000+ 6 1.81471- 2 8.50000+ 6 5.71939- 39541 3  4  513
9.00000+ 6 5.44311- 3 1.00000+ 7 4.12021- 3 1.10000+ 7 1.48972- 39541 3  4  514
1.20000+ 7 7.02535- 4 1.40000+ 7 4.22087- 5 2.00000+ 7 7.07914- 59541 3  4  515
                                                            9541 3  0  516
9.52410+ 4 2.38986+ 2          0          99          0     09541 3 16  517
0.0     + 0-6.58250+ 6         0           0          1    219541 3 16  518
         21            2       0           0          0     09541 3 16  519
6.61000+ 6 0.0     + 0 7.00000+ 6 4.00000- 3 7.50000+ 6 1.00000- 29541 3 16  520
8.00000+ 6 2.00000- 2 8.35000+ 6 2.80000- 2 8.50000+ 6 3.30000- 29541 3 16  521
9.00000+ 6 5.71000- 2 1.00000+ 7 1.41890- 1 1.10000+ 7 2.35280- 19541 3 16  522
1.20000+ 7 3.12440- 1 1.30000+ 7 3.42810- 1 1.40000+ 7 2.62410- 19541 3 16  523
1.45000+ 7 2.05330- 1 1.50000+ 7 1.62050- 1 1.55000+ 7 1.26200- 19541 3 16  524
1.60000+ 7 9.73230- 2 1.65000+ 7 7.85100- 2 1.70000+ 7 6.48540- 29541 3 16  525
1.80000+ 7 3.76830- 2 1.90000+ 7 1.83810- 2 2.00000+ 7 8.02520- 39541 3 16  526
                                                            9541 3  0  527
9.52410+ 4 2.38986+ 2          0          99          0     09541 3 17  528
0.0     + 0-1.26529+ 7         0           0          1    129541 3 17  529
         12            2       0           0          0     09541 3 17  530
1.26530+ 7 0.0     + 0 1.30000+ 7 7.97410- 4 1.40000+ 7 4.67390- 29541 3 17  531
1.45000+ 7 8.87080- 2 1.50000+ 7 1.37650- 1 1.55000+ 7 1.89430- 19541 3 17  532
1.60000+ 7 2.43410- 1 1.65000+ 7 3.16360- 1 1.70000+ 7 4.12970- 19541 3 17  533
1.80000+ 7 5.82810- 1 1.90000+ 7 6.81430- 1 2.00000+ 7 7.27720- 19541 3 17  534
                                                            9541 3  0  535
9.52410+ 4 2.38986+ 2          0           0          0     09541 3 18  536
0.0     + 0 0.0     + 0        0           0          2    509541 3 18  537
           3            2     50           5          0     09541 3 18  538
1.00000- 5 0.0     + 0 2.53000- 2 0.0     + 0 3.00000+ 4 0.0     + 09541 3 18  539
3.00000+ 4 1.41000- 2 4.00000+ 4 1.40000- 2 5.00000+ 4 1.44000- 29541 3 18  540
6.00000+ 4 1.50000- 2 7.00000+ 4 1.61000- 2 9.00000+ 4 1.76000- 29541 3 18  541
1.00000+ 5 1.83000- 2 1.20000+ 5 1.91000- 2 1.60000+ 5 2.14000- 29541 3 18  542
2.00000+ 5 2.41000- 2 2.50000+ 5 2.90000- 2 3.00000+ 5 3.87000- 29541 3 18  543
4.00000+ 5 5.63000- 2 5.00000+ 5 1.00000- 1 6.00000+ 5 1.76000- 19541 3 18  544
```

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT  SEQ
 7.00000+ 5 3.81000- 1 8.00000+ 5 7.33000- 1 9.00000+ 5 1.05000+ 09541 3 18  545
 1.00000+ 6 1.37000+ 0 1.10000+ 6 1.74000+ 0 1.20000+ 6 1.86000+ 09541 3 18  546
 1.30000+ 6 1.97000+ 0 1.40000+ 6 2.01000+ 0 1.60000+ 6 2.03000+ 09541 3 18  547
 2.00000+ 6 2.04000+ 0 2.20000+ 6 2.07000+ 0 2.50000+ 6 2.07000+ 09541 3 18  548
 2.85000+ 6 2.01000+ 0 3.00000+ 6 2.01000+ 0 4.00000+ 6 2.04000+ 09541 3 18  549
 4.25000+ 6 2.04000+ 0 5.00000+ 6 2.01000+ 0 6.00000+ 6 1.92000+ 09541 3 18  550
 6.30000+ 6 1.92000+ 0 6.60000+ 6 2.10000+ 0 7.00000+ 6 2.35000+ 09541 3 18  551
 7.50000+ 6 2.57000+ 0 8.00000+ 6 2.75000+ 0 8.35000+ 6 2.80000+ 09541 3 18  552
 9.00000+ 6 2.80000+ 0 1.00000+ 7 2.76000+ 0 1.20000+ 7 2.67000+ 09541 3 18  553
 1.30000+ 7 2.65000+ 0 1.45000+ 7 2.74000+ 0 1.60000+ 7 2.74000+ 09541 3 18  554
 1.80000+ 7 2.51000+ 0 2.00000+ 7 2.43000+ 0                      9541 3 18  555
                                                                  9541 3  0  556
 9.52410+ 4 2.38986+ 2           0          99           0        09541 3 37  557
 0.0      + 0-1.96999+ 7           0           0           1        29541 3 37  558
          2           2           0           0           0        09541 3 37  559
 1.97820+ 7 0.0      + 0 2.00000+ 7 5.05500- 7                      9541 3 37  560
                                                                  9541 3  0  561
 9.52410+ 4 2.38986+ 2           0           1           0        09541 3 51  562
 0.0      + 0-4.12000+ 4           0           0           1       639541 3 51  563
         63           3           0           0           0        09541 3 51  564
 4.13724+ 4 0.0      + 0 5.00000+ 4 9.30624- 2 6.00000+ 4 1.51166- 19541 3 51  565
 7.00000+ 4 2.05112- 1 9.00000+ 4 3.01061- 1 9.39917+ 4 3.18134- 19541 3 51  566
 1.00000+ 5 3.41580- 1 1.25000+ 5 4.19850- 1 1.50000+ 5 4.75021- 19541 3 51  567
 1.58661+ 5 4.90143- 1 1.75000+ 5 5.13407- 1 2.00000+ 5 5.39347- 19541 3 51  568
 2.06762+ 5 5.44833- 1 2.34979+ 5 5.46426- 1 2.50000+ 5 5.38980- 19541 3 51  569
 2.72134+ 5 5.35443- 1 3.00000+ 5 5.26175- 1 3.20335+ 5 5.21043- 19541 3 51  570
 3.50000+ 5 5.13296- 1 3.76569+ 5 5.06289- 1 4.00000+ 5 5.00045- 19541 3 51  571
 4.73774+ 5 4.78050- 1 5.00000+ 5 4.68094- 1 5.06611+ 5 4.65226- 19541 3 51  572
 5.51297+ 5 4.40117- 1 6.00000+ 5 4.09785- 1 6.25707+ 5 3.91570- 19541 3 51  573
 6.39565+ 5 3.82232- 1 6.54829+ 5 3.71914- 1 6.55933+ 5 3.71164- 19541 3 51  574
 6.73004+ 5 3.58980- 1 7.00000+ 5 3.40859- 1 7.35063+ 5 3.13868- 19541 3 51  575
 8.00000+ 5 2.67339- 1 9.00000+ 5 2.10888- 1 1.00000+ 6 1.58114- 19541 3 51  576
 1.10000+ 6 1.12108- 1 1.20000+ 6 8.92615- 2 1.30000+ 6 7.07645- 29541 3 51  577
 1.40000+ 6 5.78426- 2 1.60000+ 6 3.87500- 2 2.00000+ 6 1.56687- 29541 3 51  578
 2.20000+ 6 9.36966- 3 2.50000+ 6 4.36642- 3 2.85000+ 6 1.89211- 39541 3 51  579
 3.00000+ 6 1.28767- 3 4.00000+ 6 1.07010- 4 4.25000+ 6 5.92333- 59541 3 51  580
 5.00000+ 6 1.18168- 5 6.00000+ 6 1.90277- 6 6.30000+ 6 1.09493- 69541 3 51  581
 6.61000+ 6 5.03062- 7 7.00000+ 6 1.82009- 7 7.50000+ 6 3.28217- 89541 3 51  582
 8.00000+ 6 4.39289- 9 8.35000+ 6 6.12373-10 8.50000+ 6 1.51211-109541 3 51  583
 9.00000+ 6 6.46052-11 1.00000+ 7 1.04202-11 1.10000+ 7 8.62585-139541 3 51  584
 1.20000+ 7 9.93121-14 1.40000+ 7 4.15129-16 2.00000+ 7 5.81784-199541 3 51  585
                                                                  9541 3  0  586
 9.52410+ 4 2.38986+ 2           0           2           0        09541 3 52  587
 0.0      + 0-9.36000+ 4           0           0           1       589541 3 52  588
         58           3           0           0           0        09541 3 52  589
 9.39917+ 4 0.0      + 0 1.00000+ 5 8.95842- 3 1.25000+ 5 6.27897- 29541 3 52  590
 1.50000+ 5 1.15452- 1 1.58661+ 5 1.31511- 1 1.75000+ 5 1.57915- 19541 3 52  591
 2.00000+ 5 1.90666- 1 2.06762+ 5 1.98150- 1 2.34979+ 5 2.20632- 19541 3 52  592
 2.50000+ 5 2.25383- 1 2.72134+ 5 2.35110- 1 3.00000+ 5 2.41256- 19541 3 52  593
 3.20335+ 5 2.45858- 1 3.50000+ 5 2.50581- 1 3.76569+ 5 2.53783- 19541 3 52  594
 4.00000+ 5 2.55794- 1 4.73774+ 5 2.58687- 1 5.00000+ 5 2.58656- 19541 3 52  595
 5.06611+ 5 2.58434- 1 5.51297+ 5 2.54248- 1 6.00000+ 5 2.46495- 19541 3 52  596
 6.25707+ 5 2.40269- 1 6.39565+ 5 2.37045- 1 6.54829+ 5 2.33545- 19541 3 52  597
 6.55933+ 5 2.33296- 1 6.73004+ 5 2.29311- 1 7.00000+ 5 2.23318- 19541 3 52  598
 7.35063+ 5 2.11674- 1 8.00000+ 5 1.88703- 1 9.00000+ 5 1.56697- 19541 3 52  599
```

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT  SEQ
 1.00000+ 6 1.21860- 1 1.10000+ 6 8.86457- 2 1.20000+ 6 7.20471- 29541 3 52  600
 1.30000+ 6 5.80625- 2 1.40000+ 6 4.80895- 2 1.60000+ 6 3.28401- 29541 3 52  601
 2.00000+ 6 1.35740- 2 2.20000+ 6 8.17904- 3 2.50000+ 6 3.85412- 39541 3 52  602
 2.85000+ 6 1.68523- 3 3.00000+ 6 1.16061- 3 4.00000+ 6 1.00987- 49541 3 52  603
 4.25000+ 6 5.65086- 5 5.00000+ 6 1.15868- 5 6.00000+ 6 1.93200- 69541 3 52  604
 6.30000+ 6 1.12092- 6 6.61000+ 6 5.18629- 7 7.00000+ 6 1.88987- 79541 3 52  605
 7.50000+ 6 3.43353- 8 8.00000+ 6 4.62618- 9 8.35000+ 6 6.47828-109541 3 52  606
 8.50000+ 6 1.60276-10 9.00000+ 6 6.89227-11 1.00000+ 7 1.12541-119541 3 52  607
 1.10000+ 7 9.41187-13 1.20000+ 7 1.09234-13 1.40000+ 7 4.62690-169541 3 52  608
 2.00000+ 7 6.67883-19                                                9541 3 52  609
                                                                      9541 3  0  610
 9.52410+ 4 2.38986+ 2          0          3          0           09541 3 53  611
 0.0     + 0-1.58000+ 5          0          0          1          549541 3 53  612
        54          3          0          0          0           09541 3 53  613
 1.58661+ 5 0.0     + 0 1.75000+ 5 7.73844- 3 2.00000+ 5 2.13923- 29541 3 53  614
 2.06762+ 5 2.49976- 2 2.34979+ 5 3.87627- 2 2.50000+ 5 4.41550- 29541 3 53  615
 2.72134+ 5 5.18448- 2 3.00000+ 5 5.86668- 2 3.20335+ 5 6.34741- 29541 3 53  616
 3.50000+ 5 6.92378- 2 3.76569+ 5 7.39802- 2 4.00000+ 5 7.76040- 29541 3 53  617
 4.73774+ 5 8.80634- 2 5.00000+ 5 9.16480- 2 5.06611+ 5 9.24849- 29541 3 53  618
 5.51297+ 5 9.75478- 2 6.00000+ 5 1.01781- 1 6.25707+ 5 1.02892- 19541 3 53  619
 6.39565+ 5 1.03487- 1 6.54829+ 5 1.04124- 1 6.55933+ 5 1.04169- 19541 3 53  620
 6.73004+ 5 1.04809- 1 7.00000+ 5 1.05777- 1 7.35063+ 5 1.04708- 19541 3 53  621
 8.00000+ 5 9.99244- 2 9.00000+ 5 8.96607- 2 1.00000+ 6 7.37191- 29541 3 53  622
 1.10000+ 6 5.59001- 2 1.20000+ 6 4.70458- 2 1.30000+ 6 3.89760- 29541 3 53  623
 1.40000+ 6 3.30174- 2 1.60000+ 6 2.33206- 2 2.00000+ 6 1.00322- 29541 3 53  624
 2.20000+ 6 6.12844- 3 2.50000+ 6 2.94243- 3 2.85000+ 6 1.31526- 39541 3 53  625
 3.00000+ 6 9.14698- 4 4.00000+ 6 8.48543- 5 4.25000+ 6 4.81326- 59541 3 53  626
 5.00000+ 6 1.02455- 5 6.00000+ 6 1.78709- 6 6.30000+ 6 1.04818- 69541 3 53  627
 6.61000+ 6 4.89592- 7 7.00000+ 6 1.80168- 7 7.50000+ 6 3.30716- 89541 3 53  628
 8.00000+ 6 4.49593- 9 8.35000+ 6 6.33291-10 8.50000+ 6 1.57064-109541 3 53  629
 9.00000+ 6 6.80827-11 1.00000+ 7 1.12816-11 1.10000+ 7 9.55164-139541 3 53  630
 1.20000+ 7 1.11963-13 1.40000+ 7 4.82296-16 2.00000+ 7 7.23054-199541 3 53  631
                                                                      9541 3  0  632
 9.52410+ 4 2.38986+ 2          0          4          0           09541 3 54  633
 0.0     + 0-2.05900+ 5          0          0          1          519541 3 54  634
        51          3          0          0          0           09541 3 54  635
 2.06762+ 5 0.0     + 0 2.34979+ 5 1.12058- 1 2.50000+ 5 1.41114- 19541 3 54  636
 2.72134+ 5 1.74603- 1 3.00000+ 5 2.04059- 1 3.20335+ 5 2.19355- 19541 3 54  637
 3.50000+ 5 2.35537- 1 3.76569+ 5 2.45800- 1 4.00000+ 5 2.52569- 19541 3 54  638
 4.73774+ 5 2.63624- 1 5.00000+ 5 2.61802- 1 5.06611+ 5 2.61345- 19541 3 54  639
 5.51297+ 5 2.52271- 1 6.00000+ 5 2.40990- 1 6.25707+ 5 2.33317- 19541 3 54  640
 6.39565+ 5 2.28939- 1 6.54829+ 5 2.22925- 1 6.55933+ 5 2.22433- 19541 3 54  641
 6.73004+ 5 2.15175- 1 7.00000+ 5 2.03642- 1 7.35063+ 5 1.86243- 19541 3 54  642
 8.00000+ 5 1.56166- 1 9.00000+ 5 1.20154- 1 1.00000+ 6 8.80282- 29541 3 54  643
 1.10000+ 6 6.09650- 2 1.20000+ 6 4.75411- 2 1.30000+ 6 3.70383- 29541 3 54  644
 1.40000+ 6 2.98571- 2 1.60000+ 6 1.96977- 2 2.00000+ 6 8.06505- 39541 3 54  645
 2.20000+ 6 4.92672- 3 2.50000+ 6 2.39483- 3 2.85000+ 6 1.09179- 39541 3 54  646
 3.00000+ 6 7.65735- 4 4.00000+ 6 7.50016- 5 4.25000+ 6 4.31595- 59541 3 54  647
 5.00000+ 6 9.39102- 6 6.00000+ 6 1.56120- 6 6.30000+ 6 8.95668- 79541 3 54  648
 6.61000+ 6 4.09381- 7 7.00000+ 6 1.47014- 7 7.50000+ 6 2.62733- 89541 3 54  649
 8.00000+ 6 3.49279- 9 8.35000+ 6 4.85577-10 8.50000+ 6 1.19832-109541 3 54  650
 9.00000+ 6 5.12176-11 1.00000+ 7 8.31912-12 1.10000+ 7 6.92915-139541 3 54  651
 1.20000+ 7 7.99225-14 1.40000+ 7 3.33532-16 2.00000+ 7 4.63664-199541 3 54  652
                                                                      9541 3  0  653
 9.52410+ 4 2.38986+ 2          0          5          0           09541 3 55  654
```

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT  SEQ
 0.0     + 0-2.34000+ 5           0           0           1          509541 3 55  655
          50                     3           0           0           09541 3 55  656
 2.34979+ 5 0.0     + 0 2.50000+ 5 5.91046- 2 2.72134+ 5 9.77908- 29541 3 55  657
 3.00000+ 5 1.30876- 1 3.20335+ 5 1.48846- 1 3.50000+ 5 1.68264- 19541 3 55  658
 3.76569+ 5 1.80954- 1 4.00000+ 5 1.89607- 1 4.73774+ 5 2.06099- 19541 3 55  659
 5.00000+ 5 2.08296- 1 5.06611+ 5 2.08696- 1 5.51297+ 5 2.06641- 19541 3 55  660
 6.00000+ 5 2.01437- 1 6.25707+ 5 1.96902- 1 6.39565+ 5 1.94335- 19541 3 55  661
 6.54829+ 5 1.90992- 1 6.55933+ 5 1.90748- 1 6.73004+ 5 1.86800- 19541 3 55  662
 7.00000+ 5 1.80194- 1 7.35063+ 5 1.68218- 1 8.00000+ 5 1.45259- 19541 3 55  663
 9.00000+ 5 1.14859- 1 1.00000+ 6 8.53309- 2 1.10000+ 6 5.95312- 29541 3 55  664
 1.20000+ 6 4.66017- 2 1.30000+ 6 3.64374- 2 1.40000+ 6 2.94493- 29541 3 55  665
 1.60000+ 6 1.95246- 2 2.00000+ 6 8.07908- 3 2.20000+ 6 4.96635- 39541 3 55  666
 2.50000+ 6 2.43994- 3 2.85000+ 6 1.12830- 3 3.00000+ 6 7.96473- 49541 3 55  667
 4.00000+ 6 8.13413- 5 4.25000+ 6 4.72403- 5 5.00000+ 6 1.05453- 59541 3 55  668
 6.00000+ 6 1.80268- 6 6.30000+ 6 1.04004- 6 6.61000+ 6 4.77478- 79541 3 55  669
 7.00000+ 6 1.72174- 7 7.50000+ 6 3.08906- 8 8.00000+ 6 4.12069- 99541 3 55  670
 8.35000+ 6 5.74260-10 8.50000+ 6 1.41871-10 9.00000+ 6 6.08649-119541 3 55  671
 1.00000+ 7 9.96494-12 1.10000+ 7 8.36079-13 1.20000+ 7 9.70023-149541 3 55  672
 1.40000+ 7 4.08473-16 2.00000+ 7 5.78545-19                          9541 3 55  673
                                                                      9541 3  0  674
 9.52410+ 4 2.38986+ 2           0           6           0           09541 3 56  675
 0.0     + 0-2.71000+ 5           0           0           1          489541 3 56  676
          48                     3           0           0           09541 3 56  677
 2.72134+ 5 0.0     + 0 3.00000+ 5 3.12944- 2 3.20335+ 5 4.41001- 29541 3 56  678
 3.50000+ 5 5.89553- 2 3.76569+ 5 6.95564- 2 4.00000+ 5 7.73306- 29541 3 56  679
 4.73774+ 5 9.52311- 2 5.00000+ 5 1.00023- 1 5.06611+ 5 1.01072- 19541 3 56  680
 5.51297+ 5 1.06093- 1 6.00000+ 5 1.08777- 1 6.25707+ 5 1.08933- 19541 3 56  681
 6.39565+ 5 1.08917- 1 6.54829+ 5 1.08767- 1 6.55933+ 5 1.08750- 19541 3 56  682
 6.73004+ 5 1.08365- 1 7.00000+ 5 1.07447- 1 7.35063+ 5 1.03672- 19541 3 56  683
 8.00000+ 5 9.42450- 2 9.00000+ 5 7.88847- 2 1.00000+ 6 6.09501- 29541 3 56  684
 1.10000+ 6 4.37791- 2 1.20000+ 6 3.50769- 2 1.30000+ 6 2.79542- 29541 3 56  685
 1.40000+ 6 2.29618- 2 1.60000+ 6 1.56263- 2 2.00000+ 6 6.71155- 39541 3 56  686
 2.20000+ 6 4.18969- 3 2.50000+ 6 2.10373- 3 2.85000+ 6 9.97512- 49541 3 56  687
 3.00000+ 6 7.11677- 4 4.00000+ 6 7.74626- 5 4.25000+ 6 4.55840- 59541 3 56  688
 5.00000+ 6 1.05363- 5 6.00000+ 6 1.86431- 6 6.30000+ 6 1.08264- 69541 3 56  689
 6.61000+ 6 4.99558- 7 7.00000+ 6 1.80976- 7 7.50000+ 6 3.26189- 89541 3 56  690
 8.00000+ 6 4.37011- 9 8.35000+ 6 6.11010-10 8.50000+ 6 1.51175-109541 3 56  691
 9.00000+ 6 6.52030-11 1.00000+ 7 1.07984-11 1.10000+ 7 9.15495-139541 3 56  692
 1.20000+ 7 1.07083-13 1.40000+ 7 4.56498-16 2.00000+ 7 6.63947-199541 3 56  693
                                                                      9541 3  0  694
 9.52410+ 4 2.38986+ 2           0           7           0           09541 3 57  695
 0.0     + 0-3.19000+ 5           0           0           1          469541 3 57  696
          46                     3           0           0           09541 3 57  697
 3.20335+ 5 0.0     + 0 3.50000+ 5 4.68269- 3 3.76569+ 5 9.03596- 39541 3 57  698
 4.00000+ 5 1.27837- 2 4.73774+ 5 2.37635- 2 5.00000+ 5 2.73541- 29541 3 57  699
 5.06611+ 5 2.82172- 2 5.51297+ 5 3.37124- 2 6.00000+ 5 3.87173- 29541 3 57  700
 6.25707+ 5 4.07616- 2 6.39565+ 5 4.17820- 2 6.54829+ 5 4.28539- 29541 3 57  701
 6.55933+ 5 4.29276- 2 6.73004+ 5 4.40209- 2 7.00000+ 5 4.55803- 29541 3 57  702
 7.35063+ 5 4.62811- 2 8.00000+ 5 4.54833- 2 9.00000+ 5 4.14591- 29541 3 57  703
 1.00000+ 6 3.40217- 2 1.10000+ 6 2.55814- 2 1.20000+ 6 2.12789- 29541 3 57  704
 1.30000+ 6 1.74620- 2 1.40000+ 6 1.47232- 2 1.60000+ 6 1.04332- 29541 3 57  705
 2.00000+ 6 4.73749- 3 2.20000+ 6 3.02377- 3 2.50000+ 6 1.56623- 39541 3 57  706
 2.85000+ 6 7.68999- 4 3.00000+ 6 5.56723- 4 4.00000+ 6 6.60407- 59541 3 57  707
 4.25000+ 6 3.95515- 5 5.00000+ 6 9.56066- 6 6.00000+ 6 1.76431- 69541 3 57  708
 6.30000+ 6 1.03274- 6 6.61000+ 6 4.79567- 7 7.00000+ 6 1.74786- 79541 3 57  709
```

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT  SEQ
 7.50000+ 6 3.16989- 8 8.00000+ 6 4.27190- 9 8.35000+ 6 5.99884-109541 3 57  710
 8.50000+ 6 1.48714-10 9.00000+ 6 6.45844-11 1.00000+ 7 1.08525-119541 3 57  711
 1.10000+ 7 9.32335-13 1.20000+ 7 1.10213-13 1.40000+ 7 4.77566-169541 3 57  712
 2.00000+ 7 7.19423-19                                            9541 3 57  713
                                                                  9541 3  0  714
 9.5241'    ' 2.38986+ 2          0           8          0          09541 3 58  715
 0.0     + 0-3.75000+ 5          0           0          1         449541 3 58  716
       44           3            0           0          0          09541 3 58  717
 3.76569+ 5 0.0     + 0 4.00000+ 5 1.53592- 3 4.73774+ 5 5.35200- 39541 3 58  718
 5.00000+ 5 6.67423- 3 5.06611+ 5 7.00035- 3 5.51297+ 5 9.18573- 39541 3 58  719
 6.00000+ 5 1.14814- 2 6.25707+ 5 1.25399- 2 6.39565+ 5 1.30942- 29541 3 58  720
 6.54829+ 5 1.36918- 2 6.55933+ 5 1.37345- 2 6.73004+ 5 1.43856- 29541 3 58  721
 7.00000+ 5 1.53939- 2 7.35063+ 5 1.62569- 2 8.00000+ 5 1.70132- 29541 3 58  722
 9.00000+ 5 1.67195- 2 1.00000+ 6 1.45595- 2 1.10000+ 6 1.15047- 29541 3 58  723
 1.20000+ 6 9.98854- 3 1.30000+ 6 8.50854- 3 1.40000+ 6 7.41244- 39541 3 58  724
 1.60000+ 6 5.55037- 3 2.00000+ 6 2.73896- 3 2.20000+ 6 1.81065- 39541 3 58  725
 2.50000+ 6 9.85394- 4 2.85000+ 6 5.10579- 4 3.00000+ 6 3.77796- 49541 3 58  726
 4.00000+ 6 5.05901- 5 4.25000+ 6 3.10183- 5 5.00000+ 6 7.94619- 69541 3 58  727
 6.00000+ 6 1.54357- 6 6.30000+ 6 9.12042- 7 6.61000+ 6 4.26734- 79541 3 58  728
 7.00000+ 6 1.56649- 7 7.50000+ 6 2.86232- 8 8.00000+ 6 3.88565- 99541 3 58  729
 8.35000+ 6 5.48624-10 8.50000+ 6 1.36347-10 9.00000+ 6 5.97319-119541 3 58  730
 1.00000+ 7 1.02220-11 1.10000+ 7 8.92648-13 1.20000+ 7 1.06896-139541 3 58  731
 1.40000+ 7 4.72532-16 2.00000+ 7 7.43766-19                      9541 3 58  732
                                                                  9541 3  0  733
 9.52410+ 4 2.38986+ 2          0           9          0          09541 3 59  734
 0.0     + 0-4.71800+ 5          0           0          1         429541 3 59  735
       42           3            0           0          0          09541 3 59  736
 4.73774+ 5 0.0     + 0 5.00000+ 5 2.77181- 2 5.06611+ 5 3.43098- 29541 3 59  737
 5.51297+ 5 7.42272- 2 6.00000+ 5 1.05000- 1 6.25707+ 5 1.15204- 19541 3 59  738
 6.39565+ 5 1.18804- 1 6.54829+ 5 1.21652- 1 6.55933+ 5 1.21776- 19541 3 59  739
 6.73004+ 5 1.22432- 1 7.00000+ 5 1.21805- 1 7.35063+ 5 1.18058- 19541 3 59  740
 8.00000+ 5 1.07467- 1 9.00000+ 5 9.05272- 2 1.00000+ 6 7.11498- 29541 3 59  741
 1.10000+ 6 5.23837- 2 1.20000+ 6 4.32318- 2 1.30000+ 6 3.55358- 29541 3 59  742
 1.40000+ 6 3.01344- 2 1.60000+ 6 2.17966- 2 2.00000+ 6 1.00136- 29541 3 59  743
 2.20000+ 6 6.25216- 3 2.50000+ 6 3.03289- 3 2.85000+ 6 1.33116- 39541 3 59  744
 3.00000+ 6 9.11606- 4 4.00000+ 6 7.33727- 5 4.25000+ 6 4.02294- 59541 3 59  745
 5.00000+ 6 7.72328- 6 6.00000+ 6 1.17881- 6 6.30000+ 6 6.71696- 79541 3 59  746
 6.61000+ 6 3.06466- 7 7.00000+ 6 1.10166- 7 7.50000+ 6 1.97277- 89541 3 59  747
 8.00000+ 6 2.62307- 9 8.35000+ 6 3.64051-10 8.50000+ 6 8.97228-119541 3 59  748
 9.00000+ 6 3.80981-11 1.00000+ 7 6.07107-12 1.10000+ 7 4.97751-139541 3 59  749
 1.20000+ 7 5.69403-14 1.40000+ 7 2.35270-16 2.00000+ 7 3.21449-199541 3 59  750
                                                                  9541 3  0  751
 9.52410+ 4 2.38986+ 2          0          10          0          09541 3 60  752
 0.0     + 0-5.04500+ 5          0           0          1         409541 3 60  753
        40           3            0           0          0          09541 3 60  754
 5.06611+ 5 0.0     + 0 5.51297+ 5 5.23380- 2 6.00000+ 5 9.83752- 29541 3 60  755
 6.25707+ 5 1.15898- 1 6.39565+ 5 1.23401- 1 6.54829+ 5 1.30191- 19541 3 60  756
 6.55933+ 5 1.30629- 1 6.73004+ 5 1.35719- 1 7.00000+ 5 1.40926- 19541 3 60  757
 7.35063+ 5 1.41967- 1 8.00000+ 5 1.35182- 1 9.00000+ 5 1.17454- 19541 3 60  758
 1.00000+ 6 9.29680- 2 1.10000+ 6 6.81734- 2 1.20000+ 6 5.57975- 29541 3 60  759
 1.30000+ 6 4.54374- 2 1.40000+ 6 3.82322- 2 1.60000+ 6 2.73256- 29541 3 60  760
 2.00000+ 6 1.24898- 2 2.20000+ 6 7.81120- 3 2.50000+ 6 3.80530- 39541 3 60  761
 2.85000+ 6 1.68066- 3 3.00000+ 6 1.15424- 3 4.00000+ 6 9.48534- 59541 3 60  762
 4.25000+ 6 5.22663- 5 5.00000+ 6 1.01750- 5 6.00000+ 6 1.58160- 69541 3 60  763
 6.30000+ 6 9.05480- 7 6.61000+ 6 4.14878- 7 7.00000+ 6 1.49776- 79541 3 60  764
```

```
........10........20........30........40........50........60......MAT MF MT   SEQ
 7.50000+ 6 2.69348- 8 8.00000+ 6 3.59435- 9 8.35000+ 6 5.00076-109541 3 60   765
 8.50000+ 6 1.23373-10 9.00000+ 6 5.25714-11 1.00000+ 7 8.43454-129541 3 60   766
 1.10000+ 7 6.95486-13 1.20000+ 7 7.98923-14 1.40000+ 7 3.32066-169541 3 60   767
 2.00000+ 7 4.59985-19                                              9541 3 60   768
                                                                    9541 3  0   769
 9.52410+ 4 2.38986+ 2          0          11          0           09541 3 61   770
 0.0     + 0-5.49000+ 5          0           0          1          399541 3 61   771
          39           3          0           0          0           09541 3 61   772
 5.51297+ 5 0.0     + 0 6.00000+ 5 3.96376- 2 6.25707+ 5 5.85774- 29541 3 61   773
 6.39565+ 5 6.78034- 2 6.54829+ 5 7.69181- 2 6.55933+ 5 7.75351- 29541 3 61   774
 6.73004+ 5 8.61556- 2 7.00000+ 5 9.72506- 2 7.35063+ 5 1.05753- 19541 3 61   775
 8.00000+ 5 1.10347- 1 9.00000+ 5 1.03447- 1 1.00000+ 6 8.51079- 29541 3 61   776
 1.10000+ 6 6.37184- 2 1.20000+ 6 5.27698- 2 1.30000+ 6 4.32913- 29541 3 61   777
 1.40000+ 6 3.66301- 2 1.60000+ 6 2.64553- 2 2.00000+ 6 1.23734- 29541 3 61   778
 2.20000+ 6 7.82027- 3 2.50000+ 6 3.86204- 3 2.85000+ 6 1.72893- 39541 3 61   779
 3.00000+ 6 1.19407- 3 4.00000+ 6 1.01421- 4 4.25000+ 6 5.62781- 59541 3 61   780
 5.00000+ 6 1.11659- 5 6.00000+ 6 1.77808- 6 6.30000+ 6 1.02455- 69541 3 61   781
 6.61000+ 6 4.72329- 7 7.00000+ 6 1.71701- 7 7.50000+ 6 3.11162- 89541 3 61   782
 8.00000+ 6 4.18003- 9 8.35000+ 6 5.83992-10 8.50000+ 6 1.44326-109541 3 61   783
 9.00000+ 6 6.18330-11 1.00000+ 7 1.00146-11 1.10000+ 7 8.32049-139541 3 61   784
 1.20000+ 7 9.61751-14 1.40000+ 7 4.04090-16 2.00000+ 7 5.72545-199541 3 61   785
                                                                    9541 3  0   786
 9.52410+ 4 2.38986+ 2          0          12          0           09541 3 62   787
 0.0     + 0-6.23100+ 5          0           0          1          379541 3 62   788
          37           3          0           0          0           09541 3 62   789
 6.25707+ 5 0.0     + 0 6.39565+ 5 5.72496- 3 6.54829+ 5 8.90338- 39541 3 62   790
 6.55933+ 5 9.08694- 3 6.73004+ 5 1.17158- 2 7.00000+ 5 1.48800- 29541 3 62   791
 7.35063+ 5 1.74973- 2 8.00000+ 5 1.94913- 2 9.00000+ 5 1.93557- 29541 3 62   792
 1.00000+ 6 1.67846- 2 1.10000+ 6 1.31791- 2 1.20000+ 6 1.13488- 29541 3 62   793
 1.30000+ 6 9.58660- 3 1.40000+ 6 8.27071- 3 1.60000+ 6 6.07853- 39541 3 62   794
 2.00000+ 6 2.87399- 3 2.20000+ 6 1.83357- 3 2.50000+ 6 9.27017- 49541 3 62   795
 2.85000+ 6 4.30244- 4 3.00000+ 6 3.02258- 4 4.00000+ 6 2.88577- 59541 3 62   796
 4.25000+ 6 1.64902- 5 5.00000+ 6 3.51879- 6 6.00000+ 6 5.74249- 79541 3 62   797
 6.30000+ 6 3.28749- 7 6.61000+ 6 1.50120- 7 7.00000+ 6 5.38771- 89541 3 62   798
 7.50000+ 6 9.61589- 9 8.00000+ 6 1.27546- 9 8.35000+ 6 1.76973-109541 3 62   799
 8.50000+ 6 4.36356-11 9.00000+ 6 1.85955-11 1.00000+ 7 3.00554-129541 3 62   800
 1.10000+ 7 2.49648-13 1.20000+ 7 2.87484-14 1.40000+ 7 1.19395-169541 3 62   801
 2.00000+ 7 1.64204-19                                              9541 3 62   802
                                                                    9541 3  0   803
 9.52410+ 4 2.38986+ 2          0          13          0           09541 3 63   804
 0.0     + 0-6.36900+ 5          0           0          1          369541 3 63   805
          36           3          0           0          0           09541 3 63   806
 6.39565+ 5 0.0     + 0 6.54829+ 5 9.45500- 3 6.55933+ 5 1.00083- 29541 3 63   807
 6.73004+ 5 1.86545- 2 7.00000+ 5 3.11757- 2 7.35063+ 5 4.36962- 29541 3 63   808
 8.00000+ 5 5.64523- 2 9.00000+ 5 6.03879- 2 1.00000+ 6 5.29047- 29541 3 63   809
 1.10000+ 6 4.11686- 2 1.20000+ 6 3.50153- 2 1.30000+ 6 2.93026- 29541 3 63   810
 1.40000+ 6 2.51782- 2 1.60000+ 6 1.86081- 2 2.00000+ 6 9.02541- 39541 3 63   811
 2.20000+ 6 5.77140- 3 2.50000+ 6 2.87689- 3 2.85000+ 6 1.28719- 39541 3 63   812
 3.00000+ 6 8.86371- 4 4.00000+ 6 7.21758- 5 4.25000+ 6 3.96120- 59541 3 63   813
 5.00000+ 6 7.60319- 6 6.00000+ 6 1.15564- 6 6.30000+ 6 6.58316- 79541 3 63   814
 6.61000+ 6 3.00504- 7 7.00000+ 6 1.08164- 7 7.50000+ 6 1.94021- 89541 3 63   815
 8.00000+ 6 2.58296- 9 8.35000+ 6 3.58704-10 8.50000+ 6 8.84314-119541 3 63   816
 9.00000+ 6 3.75797-11 1.00000+ 7 5.99577-12 1.10000+ 7 4.92041-139541 3 63   817
 1.20000+ 7 5.63516-14 1.40000+ 7 2.33284-16 2.00000+ 7 3.19779-199541 3 63   818
                                                                    9541 3  0   819
```

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT  SEQ
9.52410+ 4 2.38986+ 2          0          14          0          09541 3 64  820
0.0     + 0-6.52100+ 5          0           0          1         359541 3 64  821
        35           3          0           0          0          09541 3 64  822
6.54829+ 5 0.0     + 0 6.55933+ 5 8.01239- 4 6.73004+ 5 4.98385- 39541 3 64  823
7.00000+ 5 1.11195- 2 7.35063+ 5 1.76769- 2 8.00000+ 5 2.48439- 49541 3 64  824
9.00000+ 5 2.79155- 2 1.00000+ 6 2.51987- 2 1.10000+ 6 2.01006- 29541 3 64  825
1.20000+ 6 1.74725- 2 1.30000+ 6 1.49023- 2 1.40000+ 6 1.30115- 29541 3 64  826
1.60000+ 6 9.84877- 3 2.00000+ 6 4.89674- 3 2.20000+ 6 3.14941- 39541 3 64  827
2.50000+ 6 1.57701- 3 2.85000+ 6 7.06597- 4 3.00000+ 6 4.86449- 49541 3 64  828
4.00000+ 6 3.92737- 5 4.25000+ 6 2.14979- 5 5.00000+ 6 4.09512- 69541 3 64  829
6.00000+ 6 6.16600- 7 6.30000+ 6 3.50361- 7 6.61000+ 6 1.59543- 79541 3 64  830
7.00000+ 6 5.72673- 8 7.50000+ 6 1.02390- 8 8.00000+ 6 1.35908- 99541 3 64  831
8.35000+ 6 1.88390-10 8.50000+ 6 4.64103-11 9.00000+ 6 1.96787-119541 3 64  832
1.00000+ 7 3.12864-12 1.10000+ 7 2.56056-13 1.20000+ 7 2.92636-149541 3 64  833
1.40000+ 7 1.20756-16 2.00000+ 7 1.64369-19                               9541 3 64  834
                                                                          9541 3  0  835
9.52410+ 4 2.38986+ 2          0          15          0          09541 3 65  836
0.0     + 0-6.53200+ 5          0           0          1         349541 3 65  837
        34           3          0           0          0          09541 3 65  838
6.55933+ 5 0.0     + 0 6.73004+ 5 1.33181- 2 7.00000+ 5 2.23932- 29541 3 65  839
7.35063+ 5 3.01100- 2 8.00000+ 5 3.70693- 2 9.00000+ 5 3.85036- 29541 3 65  840
1.00000+ 6 3.34626- 2 1.10000+ 6 2.59733- 2 1.20000+ 6 2.20188- 29541 3 65  841
1.30000+ 6 1.83055- 2 1.40000+ 6 1.55673- 2 1.60000+ 6 1.11865- 29541 3 65  842
2.00000+ 6 5.17617- 3 2.20000+ 6 3.29094- 3 2.50000+ 6 1.66285- 39541 3 65  843
2.85000+ 6 7.74189- 4 3.00000+ 6 5.45023- 4 4.00000+ 6 5.29695- 59541 3 65  844
4.25000+ 6 3.04038- 5 5.00000+ 6 6.56573- 6 6.00000+ 6 1.08427- 69541 3 65  845
6.30000+ 6 6.22292- 7 6.61000+ 6 2.84770- 7 7.00000+ 6 1.02416- 79541 3 65  846
7.50000+ 6 1.83148- 8 8.00000+ 6 2.43273- 9 8.35000+ 6 3.37816-109541 3 65  847
8.50000+ 6 8.33206-11 9.00000+ 6 3.55419-11 1.00000+ 7 5.75547-129541 3 65  848
1.10000+ 7 4.79107-13 1.20000+ 7 5.53007-14 1.40000+ 7 2.30603-169541 3 65  849
2.00000+ 7 3.19613-19                                                     9541 3 65  850
                                                                          9541 3  0  851
9.52410+ 4 2.38986+ 2          0          16          0          09541 3 66  852
0.0     + 0-6.70200+ 5          0           0          1         339541 3 66  853
        33           3          0           0          0          09541 3 66  854
6.73004+ 5 0.0     + 0 7.00000+ 5 1.56720- 2 7.35063+ 5 2.46475- 29541 3 66  855
8.00000+ 5 3.32446- 2 9.00000+ 5 3.61957- 2 1.00000+ 6 3.20647- 29541 3 66  856
1.10000+ 6 2.51397- 2 1.20000+ 6 2.14416- 2 1.30000+ 6 1.78961- 29541 3 66  857
1.40000+ 6 1.52615- 2 1.60000+ 6 1.10108- 2 2.00000+ 6 5.12076- 39541 3 66  858
2.20000+ 6 3.26234- 3 2.50000+ 6 1.65215- 3 2.85000+ 6 7.70512- 49541 3 66  859
3.00000+ 6 5.42667- 4 4.00000+ 6 5.28026- 5 4.25000+ 6 3.03127- 59541 3 66  860
5.00000+ 6 6.54872- 6 6.00000+ 6 1.08187- 6 6.30000+ 6 6.20994- 79541 3 66  861
6.61000+ 6 2.84216- 7 7.00000+ 6 1.02235- 7 7.50000+ 6 1.82854- 89541 3 66  862
8.00000+ 6 2.42904- 9 8.35000+ 6 3.37312-10 8.50000+ 6 8.31975-119541 3 66  863
9.00000+ 6 3.54901-11 1.00000+ 7 5.74740-12 1.10000+ 7 4.78494-139541 3 66  864
1.20000+ 7 5.52386-14 1.40000+ 7 2.30395-16 2.00000+ 7 3.19438-199541 3 66  865
                                                                          9541 3  0  866
9.52410+ 4 2.38986+ 2          0          98          0          09541 3 91  867
0.0     + 0-7.32000+ 5          0           0          1         319541 3 91  868
        31           3          0           0          0          09541 3 91  869
7.35063+ 5 0.0     + 0 8.00000+ 5 4.69363- 2 9.00000+ 5 2.24288- 19541 3 91  870
1.00000+ 6 4.16331- 1 1.10000+ 6 5.41685- 1 1.20000+ 6 6.82780- 19541 3 91  871
1.30000+ 6 7.87799- 1 1.40000+ 6 8.93847- 1 1.60000+ 6 1.06250+ 09541 3 91  872
2.00000+ 6 1.17580+ 0 2.20000+ 6 1.13090+ 0 2.50000+ 6 1.05764+ 09541 3 91  873
2.85000+ 6 1.01392+ 0 3.00000+ 6 9.74646- 1 4.00000+ 6 7.70657- 19541 3 91  874
```

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT  SEQ
 4.25000+ 6 7.48500- 1 5.00000+ 6 7.68930- 1 6.00000+ 6 9.23907- 19541 3 91  875
 6.30000+ 6 9.34499- 1 6.61000+ 6 7.57456- 1 7.00000+ 6 5.49548- 19541 3 91  876
 7.50000+ 6 2.35669- 1 8.00000+ 6 7.31733- 2 8.35000+ 6 1.81471- 29541 3 91  877
 8.50000+ 6 5.71939- 3 9.00000+ 6 5.44311- 3 1.00000+ 7 4.12021- 39541 3 91  878
 1.10000+ 7 1.48972- 3 1.20000+ 7 7.02535- 4 1.40000+ 7 4.22087- 59541 3 91  879
 2.00000+ 7 7.07914- 5                                             9541 3 91  880
                                                                   9541 3  0  881
 9.52410+ 4 2.38986+ 2           0          99          0          09541 3102  882
 0.0      + 0 0.0    + 0           0           0          2         689541 3102  883
          3           2          68           5          0          09541 3102  884
 1.00000- 5 0.0      + 0 2.53000- 2 0.0      + 0 3.00000+ 4 0.0      + 09541 3102  885
 3.00000+ 4 2.52458+ 0 4.00000+ 4 2.35854+ 0 4.13724+ 4 2.33973+ 09541 3102  886
 5.00000+ 4 2.17623+ 0 6.00000+ 4 2.04066+ 0 7.00000+ 4 1.92586+ 09541 3102  887
 9.00000+ 4 1.74297+ 0 9.39917+ 4 1.71249+ 0 1.00000+ 5 1.66411+ 09541 3102  888
 1.25000+ 5 1.49409+ 0 1.50000+ 5 1.36891+ 0 1.58661+ 5 1.33395+ 09541 3102  889
 1.75000+ 5 1.27328+ 0 2.00000+ 5 1.19987+ 0 2.06762+ 5 1.18322+ 09541 3102  890
 2.34979+ 5 1.08577+ 0 2.50000+ 5 1.03085+ 0 2.72134+ 5 9.72486- 19541 3102  891
 3.00000+ 5 9.07773- 1 3.20335+ 5 8.72899- 1 3.50000+ 5 8.32013- 19541 3102  892
 3.76569+ 5 8.04919- 1 4.00000+ 5 7.85945- 1 4.73774+ 5 7.47379- 19541 3102  893
 5.00000+ 5 7.31832- 1 5.06611+ 5 7.28182- 1 5.51297+ 5 6.96083- 19541 3102  894
 6.00000+ 5 6.64757- 1 6.25707+ 5 6.46541- 1 6.39565+ 5 6.36494- 19541 3102  895
 6.54829+ 5 6.24682- 1 6.55933+ 5 6.23605- 1 6.73004+ 5 6.08590- 19541 3102  896
 7.00000+ 5 5.87147- 1 7.35063+ 5 5.54113- 1 8.00000+ 5 4.95509- 19541 3102  897
 9.00000+ 5 4.21106- 1 1.00000+ 6 3.40604- 1 1.10000+ 6 2.60760- 19541 3102  898
 1.20000+ 6 2.25323- 1 1.30000+ 6 1.94842- 1 1.40000+ 6 1.74570- 19541 3102  899
 1.60000+ 6 1.42679- 1 2.00000+ 6 9.00736- 2 2.20000+ 6 6.83208- 29541 3102  900
 2.50000+ 6 4.58069- 2 2.85000+ 6 3.01246- 2 3.00000+ 6 2.46246- 29541 3102  901
 4.00000+ 6 6.22526- 3 4.25000+ 6 4.45891- 3 5.00000+ 6 1.82938- 39541 3102  902
 6.00000+ 6 6.93741- 4 6.30000+ 6 5.08602- 4 6.61000+ 6 2.99715- 49541 3102  903
 7.00000+ 6 1.48536- 4 7.50000+ 6 4.04177- 5 8.00000+ 6 8.26981- 69541 3102  904
 8.35000+ 6 1.56441- 6 8.50000+ 6 4.41214- 7 9.00000+ 6 2.96215- 79541 3102  905
 1.00000+ 7 1.21767- 7 1.10000+ 7 2.63038- 8 1.20000+ 7 8.05779- 99541 3102  906
 1.40000+ 7 2.63611-10 2.00000+ 7 1.77070-10                       9541 3102  907
                                                                   9541 3  0  908
 9.52410+ 4 2.38986+ 2           0          0           0          09541 3251  909
 0.0      + 0 0.0    + 0           0          0           1         689541 3251  910
          68          3           0          0           0          09541 3251  911
 1.00000- 5 2.76625- 3 2.53000- 2 2.76625- 3 1.00000+ 2 2.76625- 39541 3251  912
 3.00000+ 4 3.17488- 2 4.00000+ 4 4.26056- 2 4.13724+ 4 4.41014- 29541 3251  913
 5.00000+ 4 5.36487- 2 6.00000+ 4 6.46082- 2 7.00000+ 4 7.54646- 29541 3251  914
 9.00000+ 4 9.66975- 2 9.39917+ 4 1.00842- 1 1.00000+ 5 1.07039- 19541 3251  915
 1.25000+ 5 1.32079- 1 1.50000+ 5 1.55700- 1 1.58661+ 5 1.63530- 19541 3251  916
 1.75000+ 5 1.77826- 1 2.00000+ 5 1.98463- 1 2.06762+ 5 2.03789- 19541 3251  917
 2.34979+ 5 2.26141- 1 2.50000+ 5 2.37653- 1 2.72134+ 5 2.53274- 19541 3251  918
 3.00000+ 5 2.71643- 1 3.20335+ 5 2.83940- 1 3.50000+ 5 3.00460- 19541 3251  919
 3.76569+ 5 3.13953- 1 4.00000+ 5 3.24914- 1 4.73774+ 5 3.54759- 19541 3251  920
 5.00000+ 5 3.64361- 1 5.06611+ 5 3.66724- 1 5.51297+ 5 3.82663- 19541 3251  921
 6.00000+ 5 3.98478- 1 6.25707+ 5 4.06537- 1 6.39565+ 5 4.10764- 19541 3251  922
 6.54829+ 5 4.15295- 1 6.55933+ 5 4.15629- 1 6.73004+ 5 4.20877- 19541 3251  923
 7.00000+ 5 4.28650- 1 7.35063+ 5 4.38618- 1 8.00000+ 5 4.54821- 19541 3251  924
 9.00000+ 5 4.73617- 1 1.00000+ 6 4.89592- 1 1.10000+ 6 5.03869- 19541 3251  925
 1.20000+ 6 5.13301- 1 1.30000+ 6 5.23316- 1 1.40000+ 6 5.33971- 19541 3251  926
 1.60000+ 6 5.59453- 1 2.00000+ 6 6.18117- 1 2.20000+ 6 6.45421- 19541 3251  927
 2.50000+ 6 6.80157- 1 2.85000+ 6 7.11680- 1 3.00000+ 6 7.22770- 19541 3251  928
 4.00000+ 6 7.73451- 1 4.25000+ 6 7.81917- 1 5.00000+ 6 8.00285- 19541 3251  929
```

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT  SEQ
 6.00000+ 6 8.11955- 1 6.30000+ 6 8.13513- 1 6.61000+ 6 8.14440- 19541 3251  930
 7.00000+ 6 8.14769- 1 7.50000+ 6 8.14156- 1 8.00000+ 6 8.12924- 19541 3251  931
 8.35000+ 6 8.12049- 1 8.50000+ 6 8.11738- 1 9.00000+ 6 8.11278- 19541 3251  932
 1.00000+ 7 8.15026- 1 1.10000+ 7 8.26823- 1 1.20000+ 7 8.44301- 19541 3251  933
 1.40000+ 7 8.81575- 1 2.00000+ 7 9.43808- 1                      9541 3251  934
                                                                  9541 3   0  935
                                                                  9541 0   0  936
 9.52410+ 4 2.38986+ 2           0           0           2        09541 5 16  937
 6.61000+ 6 0.0     + 0           0           9           1        29541 5 16  938
          2           2           0           0           0        09541 5 16  939
 6.61000+ 6 5.00000- 1 2.00000+ 7 5.00000- 1                       9541 5 16  940
 0.0      + 0 0.0     + 0           0           0           1        29541 5 16  941
          2           5           0           0           0        09541 5 16  942
 6.61000+ 6 5.23100+ 5 2.00000+ 7 8.95284+ 5                       9541 5 16  943
 6.61000+ 6 0.0     + 0           0           9           1        29541 5 16  944
          2           2           0           0           0        09541 5 16  945
 6.61000+ 6 5.00000- 1 2.00000+ 7 5.00000- 1                       9541 5 16  946
 0.0      + 0 0.0     + 0           0           0           1        99541 5 16  947
          9           2           0           0           0        09541 5 16  948
 6.61000+ 6 3.89000+ 4 7.00000+ 6 9.74600+ 4 8.00000+ 6 1.82400+ 59541 5 16  949
 1.00000+ 7 3.13100+ 5 1.20000+ 7 4.15300+ 5 1.40000+ 7 4.98800+ 59541 5 16  950
 1.60000+ 7 5.70500+ 5 1.80000+ 7 6.34100+ 5 2.00000+ 7 6.91900+ 59541 5 16  951
                                                                  9541 5   0  952
 9.52410+ 4 2.38986+ 2           0           0           3        09541 5 17  953
 1.26530+ 7 0.0     + 0           0           9           1        29541 5 17  954
          2           2           0           0           0        09541 5 17  955
 1.26530+ 7 3.33334- 1 2.00000+ 7 3.33334- 1                       9541 5 17  956
 0.0      + 0 0.0     + 0           0           0           1        29541 5 17  957
          2           5           0           0           0        09541 5 17  958
 1.26530+ 7 7.16120+ 5 2.00000+ 7 8.95284+ 5                       9541 5 17  959
 1.26530+ 7 0.0     + 0           0           9           1        29541 5 17  960
          2           2           0           0           0        09541 5 17  961
 1.26530+ 7 3.33333- 1 2.00000+ 7 3.33333- 1                       9541 5 17  962
 0.0      + 0 0.0     + 0           0           0           1        39541 5 17  963
          3           5           0           0           0        09541 5 17  964
 1.26530+ 7 5.05000+ 5 1.50000+ 7 5.51800+ 5 2.00000+ 7 6.92400+ 59541 5 17  965
 1.26530+ 7 0.0     + 0           0           9           1        29541 5 17  966
          2           2           0           0           0        09541 5 17  967
 1.26530+ 7 3.33333- 1 2.00000+ 7 3.33333- 1                       9541 5 17  968
 0.0      + 0 0.0     + 0           0           0           1        39541 5 17  969
          3           2           0           0           0        09541 5 17  970
 1.26530+ 7 3.90800+ 4 1.50000+ 7 1.70600+ 5 2.00000+ 7 4.25300+ 59541 5 17  971
                                                                  9541 5   0  972
 9.52410+ 4 2.38986+ 2           0           0           1        09541 5 18  973
-2.00000+ 7 0.0     + 0           0           7           1        29541 5 18  974
          2           2           0           0           0        09541 5 18  975
 1.00000- 5 1.00000+ 0 2.00000+ 7 1.00000+ 0                       9541 5 18  976
 0.0      + 0 0.0     + 0           0           0           1        29541 5 18  977
          2           2           0           0           0        09541 5 18  978
 1.00000- 5 1.38900+ 6 2.00000+ 7 1.38900+ 6                       9541 5 18  979
                                                                  9541 5   0  980
 9.52410+ 4 2.38986+ 2           0           0           1        09541 5 91  981
 7.35063+ 5 0.0     + 0           0           9           1        29541 5 91  982
          2           2           0           0           0        09541 5 91  983
 7.35063+ 5 1.00000+ 0 2.00000+ 7 1.00000+ 0                       9541 5 91  984
 0.0      + 0 0.0     + 0           0           0           1        39541 5 91  985
          3           5           0           0           0        09541 5 91  986
 7.35063+ 5 1.88190+ 5 2.00000+ 6 2.96825+ 5 2.00000+ 7 8.95284+ 59541 5 91  987
                                                                  9541 5   0  988
                                                                  9541 0   0  989
```

Americium-243

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT  SEQ
 9.52430+ 4 2.40973+ 2          1          1          0        289543 1451    1
 0.0     + 0 0.0     + 0        0          0          1         09543 1451    2
                                                                 9543 1451    3
                               1        451         31          9543 1451    4
                               1        452          5          9543 1451    5
                               1        455          7          9543 1451    6
                               1        456          3          9543 1451    7
                               2        151        289          9543 1451    8
                               3          1         21          9543 1451    9
                               3          2         21          9543 1451   10
                               3          4         19          9543 1451   11
                               3         16          9          9543 1451   12
                               3         17          7          9543 1451   13
                               3         18         21          9543 1451   14
                               3         37          4          9543 1451   15
                               3         51         19          9543 1451   16
                               3         52         18          9543 1451   17
                               3         53         18          9543 1451   18
                               3         54         17          9543 1451   19
                               3         55         17          9543 1451   20
                               3         56         16          9543 1451   21
                               3         57         15          9543 1451   22
                               3         58         15          9543 1451   23
                               3         59         14          9543 1451   24
                               3         91         14          9543 1451   25
                               3        102         21          9543 1451   26
                               3        251         21          9543 1451   27
                               5         16         15          9543 1451   28
                               5         17         19          9543 1451   29
                               5         18          7          9543 1451   30
                               5         91          7          9543 1451   31
                                                                 9543 1  0   32
 9.52430+ 4 2.40973+ 2          0          2          0         09543 1452   33
 0.0     + 0 0.0     + 0        0          0          1         49543 1452   34
         4           2          0          0          0         09543 1452   35
 1.00000- 5 3.20950+ 0 6.00000+ 6 4.16950+ 0 8.00000+ 6 4.48650+ 09543 1452   36
 2.00000+ 7 6.40650+ 0                                            9543 1452   37
                                                                  9543 1  0   38
 9.52430+ 4 2.40973+ 2          0          2          0         09543 1455   39
 0.0     + 0 0.0     + 0        0          0          6         09543 1455   40
 1.29000- 2 3.13000- 2 1.35000- 1 3.33000- 1 1.36000+ 0 4.04000+ 09543 1455   41
 0.0     + 0 0.0     + 0        0          0          1         49543 1455   42
         4           2          0          0          0         09543 1455   43
 1.00000- 5 9.50000- 3 6.00000+ 6 9.50000- 3 8.00000+ 6 6.50000- 39543 1455   44
 2.00000+ 7 6.50000- 3                                            9543 1455   45
                                                                  9543 1  0   46
 9.52430+ 4 2.40973+ 2          0          1          0         09543 1456   47
 0.0     + 0 0.0     + 0        0          0          2         09543 1456   48
 3.20000+ 0 1.60000- 7                                            9543 1456   49
```

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT  SEQ
                                                 9543 1  0   50
                                                 9543 0  0   51
 9.52430+ 4 2.40973+ 2          0          0          1        09543 2151  52
 9.52430+ 4 1.00000+ 0          0          0          2        09543 2151  53
 1.00000- 5 2.15000+ 2          1          2          0        09543 2151  54
 2.50000+ 0 9.05000- 1          0          0          1        09543 2151  55
 2.40973+ 2 0.0     + 0          0          0       1320     2209543 2151  56
-2.00000+ 0 2.50000+ 0 4.05200- 2 1.40000- 3 3.90000- 2 1.20000- 49543 2151  57
 4.20000- 1 2.50000+ 0 3.91208- 2 8.42496- 7 3.90000- 2 1.20000- 49543 2151  58
 9.83000- 1 2.50000+ 0 3.81346- 2 1.45745- 5 3.80000- 2 1.20000- 49543 2151  59
 1.35600+ 0 2.50000+ 0 4.42262- 2 1.10625- 3 4.30000- 2 1.20000- 49543 2151  60
 1.74400+ 0 2.50000+ 0 3.93603- 2 2.40350- 4 3.90000- 2 1.20000- 49543 2151  61
 3.14000+ 0 2.50000+ 0 3.21313- 2 1.13408- 5 3.20000- 2 1.20000- 49543 2151  62
 3.42400+ 0 2.50000+ 0 3.84068- 2 2.86813- 4 3.80000- 2 1.20000- 49543 2151  63
 3.84500+ 0 2.50000+ 0 4.51331- 2 1.31378- 5 4.50000- 2 1.20000- 49543 2151  64
 5.12500+ 0 2.50000+ 0 3.94347- 2 3.14675- 4 3.90000- 2 1.20000- 49543 2151  65
 6.55400+ 0 2.50000+ 0 3.80877- 2 9.67710- 4 3.70000- 2 1.20000- 49543 2151  66
 7.06700+ 0 2.50000+ 0 4.01918- 2 7.17763- 5 4.00000- 2 1.20000- 49543 2151  67
 7.86300+ 0 2.50000+ 0 4.04519- 2 1.33195- 3 3.90000- 2 1.20000- 49543 2151  68
 8.37700+ 0 2.50000+ 0 3.91287- 2 8.68291- 6 3.90000- 2 1.20000- 49543 2151  69
 8.77000+ 0 2.50000+ 0 3.72385- 2 1.18457- 4 3.70000- 2 1.20000- 49543 2151  70
 9.31400+ 0 2.50000+ 0 3.92726- 2 1.52594- 4 3.90000- 2 1.20000- 49543 2151  71
 1.03140+ 1 2.50000+ 0 4.95696- 2 4.49616- 4 4.90000- 2 1.20000- 49543 2151  72
 1.08770+ 1 2.50000+ 0 3.91332- 2 1.31921- 5 3.90000- 2 1.20000- 49543 2151  73
 1.12780+ 1 2.50000+ 0 4.14054- 2 2.85453- 4 4.10000- 2 1.20000- 49543 2151  74
 1.16930+ 1 2.50000+ 0 2.62260- 2 1.06005- 4 2.60000- 2 1.20000- 49543 2151  75
 1.21220+ 1 2.50000+ 0 3.72941- 2 1.74083- 4 3.70000- 2 1.20000- 49543 2151  76
 1.28770+ 1 2.50000+ 0 3.85242- 2 2.40426- 3 3.60000- 2 1.20000- 49543 2151  77
 1.31520+ 1 2.50000+ 0 4.25162- 2 1.39623- 3 4.10000- 2 1.20000- 49543 2151  78
 1.51430+ 1 2.50000+ 0 3.92173- 2 9.72850- 5 3.90000- 2 1.20000- 49543 2151  79
 1.54040+ 1 2.50000+ 0 4.54544- 2 1.33443- 3 4.40000- 2 1.20000- 49543 2151  80
 1.62100+ 1 2.50000+ 0 4.86716- 2 5.51585- 4 4.80000- 2 1.20000- 49543 2151  81
 1.65830+ 1 2.50000+ 0 3.63155- 2 1.95467- 4 3.60000- 2 1.20000- 49543 2151  82
 1.78740+ 1 2.50000+ 0 4.23483- 2 2.28299- 4 4.20000- 2 1.20000- 49543 2151  83
 1.81580+ 1 2.50000+ 0 3.91796- 2 5.96571- 5 3.90000- 2 1.20000- 49543 2151  84
 1.95330+ 1 2.50000+ 0 3.93542- 2 2.34240- 4 3.90000- 2 1.20000- 49543 2151  85
 1.99150+ 1 2.50000+ 0 3.92226- 2 1.02640- 4 3.90000- 2 1.20000- 49543 2151  86
 2.09740+ 1 2.50000+ 0 3.95780- 2 4.57974- 4 3.90000- 2 1.20000- 49543 2151  87
 2.11150+ 1 2.50000+ 0 4.02228- 2 1.10283- 3 3.90000- 2 1.20000- 49543 2151  88
 2.18720+ 1 2.50000+ 0 3.92743- 2 1.54333- 4 3.90000- 2 1.20000- 49543 2151  89
 2.20110+ 1 2.50000+ 0 3.91716- 2 5.16075- 5 3.90000- 2 1.20000- 49543 2151  90
 2.26000+ 1 2.50000+ 0 3.96429- 2 5.22934- 4 3.90000- 2 1.20000- 49543 2151  91
 2.27390+ 1 2.50000+ 0 4.04552- 2 1.33519- 3 3.90000- 2 1.20000- 49543 2151  92
 2.44540+ 1 2.50000+ 0 4.00596- 2 9.39569- 4 3.90000- 2 1.20000- 49543 2151  93
 2.54150+ 1 2.50000+ 0 3.92813- 2 1.61323- 4 3.90000- 2 1.20000- 49543 2151  94
 2.62370+ 1 2.50000+ 0 3.91610- 2 4.09777- 5 3.90000- 2 1.20000- 49543 2151  95
 2.67500+ 1 2.50000+ 0 4.07750- 2 1.65505- 3 3.90000- 2 1.20000- 49543 2151  96
 2.73550+ 1 2.50000+ 0 3.96430- 2 5.23020- 4 3.90000- 2 1.20000- 49543 2151  97
 2.87350+ 1 2.50000+ 0 4.02082- 2 1.08818- 3 3.90000- 2 1.20000- 49543 2151  98
 2.93000+ 1 2.50000+ 0 3.98507- 2 7.30748- 4 3.90000- 2 1.20000- 49543 2151  99
 3.01300+ 1 2.50000+ 0 3.96689- 2 5.48908- 4 3.90000- 2 1.20000- 49543 2151 100
 3.10700+ 1 2.50000+ 0 3.99282- 2 8.08237- 4 3.90000- 2 1.20000- 49543 2151 101
 3.14900+ 1 2.50000+ 0 3.92939- 2 1.73959- 4 3.90000- 2 1.20000- 49543 2151 102
 3.24200+ 1 2.50000+ 0 3.92680- 2 1.48040- 4 3.90000- 2 1.20000- 49543 2151 103
 3.32000+ 1 2.50000+ 0 4.00995- 2 9.79530- 4 3.90000- 2 1.20000- 49543 2151 104
```

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT  SEQ
 3.39400+ 1 2.50000+ 0 4.09842- 2 1.86426- 3 3.90000- 2 1.20000- 49543 2151  105
 3.49900+ 1 2.50000+ 0 4.01256- 2 1.00559- 3 3.90000- 2 1.20000- 49543 2151  106
 3.66700+ 1 2.50000+ 0 3.99678- 2 8.47781- 4 3.90000- 2 1.20000- 49543 2151  107
 3.70300+ 1 2.50000+ 0 4.11281- 2 2.00813- 3 3.90000- 2 1.20000- 49543 2151  108
 3.75500+ 1 2.50000+ 0 3.91997- 2 7.96615- 5 3.90000- 2 1.20000- 49543 2151  109
 3.79300+ 1 2.50000+ 0 3.97359- 2 6.15873- 4 3.90000- 2 1.20000- 49543 2151  110
 3.95000+ 1 2.50000+ 0 3.97611- 2 6.41060- 4 3.90000- 2 1.20000- 49543 2151  111
 4.05000+ 1 2.50000+ 0 3.92155- 2 9.54594- 5 3.90000- 2 1.20000- 49543 2151  112
 4.09500+ 1 2.50000+ 0 3.94400- 2 3.19961- 4 3.90000- 2 1.20000- 49543 2151  113
 4.12600+ 1 2.50000+ 0 4.02120- 2 1.09198- 3 3.90000- 2 1.20000- 49543 2151  114
 4.15400+ 1 2.50000+ 0 4.16336- 2 2.51361- 3 3.90000- 2 1.20000- 49543 2151  115
 4.29500+ 1 2.50000+ 0 4.19381- 2 2.81806- 3 3.90000- 2 1.20000- 49543 2151  116
 4.41100+ 1 2.50000+ 0 3.95517- 2 4.31700- 4 3.90000- 2 1.20000- 49543 2151  117
 4.53500+ 1 2.50000+ 0 4.02648- 2 1.14482- 3 3.90000- 2 1.20000- 49543 2151  118
 4.71100+ 1 2.50000+ 0 3.95181- 2 3.98093- 4 3.90000- 2 1.20000- 49543 2151  119
 4.85500+ 1 2.50000+ 0 3.95799- 2 4.59874- 4 3.90000- 2 1.20000- 49543 2151  120
 4.92900+ 1 2.50000+ 0 3.98782- 2 7.58234- 4 3.90000- 2 1.20000- 49543 2151  121
 5.02000+ 1 2.50000+ 0 3.92263- 2 1.06278- 4 3.90000- 2 1.20000- 49543 2151  122
 5.12800+ 1 2.50000+ 0 4.01941- 2 1.07415- 3 3.90000- 2 1.20000- 49543 2151  123
 5.21700+ 1 2.50000+ 0 3.92283- 2 1.08343- 4 3.90000- 2 1.20000- 49543 2151  124
 5.30300+ 1 2.50000+ 0 4.12318- 2 2.11183- 3 3.90000- 2 1.20000- 49543 2151  125
 5.36000+ 1 2.50000+ 0 3.92152- 2 9.51756- 5 3.90000- 2 1.20000- 49543 2151  126
 5.40200+ 1 2.50000+ 0 3.97815- 2 6.61485- 4 3.90000- 2 1.20000- 49543 2151  127
 5.45500+ 1 2.50000+ 0 4.10403- 2 1.92031- 3 3.90000- 2 1.20000- 49543 2151  128
 5.49300+ 1 2.50000+ 0 3.92905- 2 1.70464- 4 3.90000- 2 1.20000- 49543 2151  129
 5.58700+ 1 2.50000+ 0 4.07644- 2 1.64442- 3 3.90000- 2 1.20000- 49543 2151  130
 5.87400+ 1 2.50000+ 0 3.95645- 2 4.44524- 4 3.90000- 2 1.20000- 49543 2151  131
 5.91300+ 1 2.50000+ 0 4.00197- 2 8.99684- 4 3.90000- 2 1.20000- 49543 2151  132
 5.99800+ 1 2.50000+ 0 3.98945- 2 7.74468- 4 3.90000- 2 1.20000- 49543 2151  133
 6.07600+ 1 2.50000+ 0 4.03282- 2 1.20820- 3 3.90000- 2 1.20000- 49543 2151  134
 6.12000+ 1 2.50000+ 0 4.20145- 2 2.89453- 3 3.90000- 2 1.20000- 49543 2151  135
 6.25100+ 1 2.50000+ 0 3.93888- 2 2.68815- 4 3.90000- 2 1.20000- 49543 2151  136
 6.31900+ 1 2.50000+ 0 3.95175- 2 3.97461- 4 3.90000- 2 1.20000- 49543 2151  137
 6.48200+ 1 2.50000+ 0 3.95225- 2 4.02554- 4 3.90000- 2 1.20000- 49543 2151  138
 6.62100+ 1 2.50000+ 0 4.04789- 2 1.35887- 3 3.90000- 2 1.20000- 49543 2151  139
 6.73600+ 1 2.50000+ 0 4.02198- 2 1.09978- 3 3.90000- 2 1.20000- 49543 2151  140
 6.80100+ 1 2.50000+ 0 4.03570- 2 1.23702- 3 3.90000- 2 1.20000- 49543 2151  141
 6.86700+ 1 2.50000+ 0 4.07193- 2 1.59934- 3 3.90000- 2 1.20000- 49543 2151  142
 6.96600+ 1 2.50000+ 0 4.30511- 2 3.93109- 3 3.90000- 2 1.20000- 49543 2151  143
 7.02700+ 1 2.50000+ 0 4.15426- 2 2.42261- 3 3.90000- 2 1.20000- 49543 2151  144
 7.16000+ 1 2.50000+ 0 3.93738- 2 2.53850- 4 3.90000- 2 1.20000- 49543 2151  145
 7.22200+ 1 2.50000+ 0 4.17459- 2 2.62595- 3 3.90000- 2 1.20000- 49543 2151  146
 7.28800+ 1 2.50000+ 0 4.21165- 2 2.99648- 3 3.90000- 2 1.20000- 49543 2151  147
 7.39300+ 1 2.50000+ 0 3.94811- 2 3.61127- 4 3.90000- 2 1.20000- 49543 2151  148
 7.43400+ 1 2.50000+ 0 3.94821- 2 3.62127- 4 3.90000- 2 1.20000- 49543 2151  149
 7.48800+ 1 2.50000+ 0 3.94315- 2 3.11520- 4 3.90000- 2 1.20000- 49543 2151  150
 7.54300+ 1 2.50000+ 0 4.22466- 2 3.12662- 3 3.90000- 2 1.20000- 49543 2151  151
 7.65000+ 1 2.50000+ 0 3.93299- 2 2.09914- 4 3.90000- 2 1.20000- 49543 2151  152
 7.70000+ 1 2.50000+ 0 3.96465- 2 5.26498- 4 3.90000- 2 1.20000- 49543 2151  153
 7.75400+ 1 2.50000+ 0 4.06170- 2 1.49697- 3 3.90000- 2 1.20000- 49543 2151  154
 7.82200+ 1 2.50000+ 0 3.94295- 2 3.09547- 4 3.90000- 2 1.20000- 49543 2151  155
 8.05000+ 1 2.50000+ 0 4.00621- 2 9.42079- 4 3.90000- 2 1.20000- 49543 2151  156
 8.10000+ 1 2.50000+ 0 4.14960- 2 2.37600- 3 3.90000- 2 1.20000- 49543 2151  157
 8.11000+ 1 2.50000+ 0 4.08311- 2 1.71106- 3 3.90000- 2 1.20000- 49543 2151  158
 8.31000+ 1 2.50000+ 0 4.01592- 2 1.03921- 3 3.90000- 2 1.20000- 49543 2151  159
```

```
........10........20........30........40........50........60......MAT MF MT  SEQ
 8.35200+ 1 2.50000+ 0 4.16332- 2 2.51321- 3 3.90000- 2 1.20000- 49543 2151  160
 8.41900+ 1 2.50000+ 0 4.13221- 2 2.20212- 3 3.90000- 2 1.20000- 49543 2151  161
 8.55600+ 1 2.50000+ 0 4.59279- 2 6.80790- 3 3.90000- 2 1.20000- 49543 2151  162
 8.66300+ 1 2.50000+ 0 4.07023- 2 1.58228- 3 3.90000- 2 1.20000- 49543 2151  163
 8.83600+ 1 2.50000+ 0 4.05676- 2 1.44760- 3 3.90000- 2 1.20000- 49543 2151  164
 8.90000+ 1 2.50000+ 0 4.04030- 2 1.28302- 3 3.90000- 2 1.20000- 49543 2151  165
 9.04300+ 1 2.50000+ 0 4.05464- 2 1.42642- 3 3.90000- 2 1.20000- 49543 2151  166
 9.12500+ 1 2.50000+ 0 4.02663- 2 1.14630- 3 3.90000- 2 1.20000- 49543 2151  167
 9.47200+ 1 2.50000+ 0 4.04825- 2 1.36254- 3 3.90000- 2 1.20000- 49543 2151  168
 9.58000+ 1 2.50000+ 0 3.95115- 2 3.91510- 4 3.90000- 2 1.20000- 49543 2151  169
 9.75300+ 1 2.50000+ 0 4.12927- 2 2.17266- 3 3.90000- 2 1.20000- 49543 2151  170
 9.94800+ 1 2.50000+ 0 4.01174- 2 9.97397- 4 3.90000- 2 1.20000- 49543 2151  171
 1.01120+ 2 2.50000+ 0 4.28407- 2 3.72066- 3 3.90000- 2 1.20000- 49543 2151  172
 1.01920+ 2 2.50000+ 0 4.16439- 2 2.52389- 3 3.90000- 2 1.20000- 49543 2151  173
 1.04060+ 2 2.50000+ 0 3.98443- 2 7.24270- 4 3.90000- 2 1.20000- 49543 2151  174
 1.04960+ 2 2.50000+ 0 4.10665- 2 1.94655- 3 3.90000- 2 1.20000- 49543 2151  175
 1.07170+ 2 2.50000+ 0 4.27951- 2 3.67506- 3 3.90000- 2 1.20000- 49543 2151  176
 1.09720+ 2 2.50000+ 0 4.03979- 2 1.27792- 3 3.90000- 2 1.20000- 49543 2151  177
 1.11630+ 2 2.50000+ 0 4.05146- 2 1.39465- 3 3.90000- 2 1.20000- 49543 2151  178
 1.12120+ 2 2.50000+ 0 4.01683- 2 1.04828- 3 3.90000- 2 1.20000- 49543 2151  179
 1.12700+ 2 2.50000+ 0 4.03408- 2 1.22084- 3 3.90000- 2 1.20000- 49543 2151  180
 1.13190+ 2 2.50000+ 0 4.94718- 2 1.03518- 2 3.90000- 2 1.20000- 49543 2151  181
 1.14240+ 2 2.50000+ 0 4.45390- 2 5.41897- 3 3.90000- 2 1.20000- 49543 2151  182
 1.16600+ 2 2.50000+ 0 4.64951- 2 7.37513- 3 3.90000- 2 1.20000- 49543 2151  183
 1.19740+ 2 2.50000+ 0 4.38472- 2 4.72719- 3 3.90000- 2 1.20000- 49543 2151  184
 1.22310+ 2 2.50000+ 0 4.61980- 2 7.07801- 3 3.90000- 2 1.20000- 49543 2151  185
 1.23370+ 2 2.50000+ 0 5.76690- 2 1.85490- 2 3.90000- 2 1.20000- 49543 2151  186
 1.25180+ 2 2.50000+ 0 4.70414- 2 7.92138- 3 3.90000- 2 1.20000- 49543 2151  187
 1.26400+ 2 2.50000+ 0 3.98508- 2 7.30780- 4 3.90000- 2 1.20000- 49543 2151  188
 1.27380+ 2 2.50000+ 0 4.14901- 2 2.37012- 3 3.90000- 2 1.20000- 49543 2151  189
 1.30300+ 2 2.50000+ 0 3.96679- 2 5.47915- 4 3.90000- 2 1.20000- 49543 2151  190
 1.32500+ 2 2.50000+ 0 3.99833- 2 8.63315- 4 3.90000- 2 1.20000- 49543 2151  191
 1.33500+ 2 2.50000+ 0 4.01368- 2 1.01677- 3 3.90000- 2 1.20000- 49543 2151  192
 1.34100+ 2 2.50000+ 0 4.05675- 2 1.44752- 3 3.90000- 2 1.20000- 49543 2151  193
 1.34700+ 2 2.50000+ 0 3.98744- 2 7.54392- 4 3.90000- 2 1.20000- 49543 2151  194
 1.35200+ 2 2.50000+ 0 3.98525- 2 7.32536- 4 3.90000- 2 1.20000- 49543 2151  195
 1.39400+ 2 2.50000+ 0 4.15640- 2 2.44400- 3 3.90000- 2 1.20000- 49543 2151  196
 1.40030+ 2 2.50000+ 0 4.60425- 2 6.92255- 3 3.90000- 2 1.20000- 49543 2151  197
 1.41200+ 2 2.50000+ 0 4.03796- 2 1.25957- 3 3.90000- 2 1.20000- 49543 2151  198
 1.44000+ 2 2.50000+ 0 4.29240- 2 3.80400- 3 3.90000- 2 1.20000- 49543 2151  199
 1.44470+ 2 2.50000+ 0 4.55745- 2 6.45451- 3 3.90000- 2 1.20000- 49543 2151  200
 1.45000+ 2 2.50000+ 0 4.27325- 2 3.61248- 3 3.90000- 2 1.20000- 49543 2151  201
 1.46090+ 2 2.50000+ 0 4.81246- 2 9.00464- 3 3.90000- 2 1.20000- 49543 2151  202
 1.46600+ 2 2.50000+ 0 4.31882- 2 4.06824- 3 3.90000- 2 1.20000- 49543 2151  203
 1.48380+ 2 2.50000+ 0 4.36270- 2 4.50702- 3 3.90000- 2 1.20000- 49543 2151  204
 1.49800+ 2 2.50000+ 0 3.98544- 2 7.34357- 4 3.90000- 2 1.20000- 49543 2151  205
 1.51100+ 2 2.50000+ 0 4.01034- 2 9.83382- 4 3.90000- 2 1.20000- 49543 2151  206
 1.52800+ 2 2.50000+ 0 4.11720- 2 2.05196- 3 3.90000- 2 1.20000- 49543 2151  207
 1.54000+ 2 2.50000+ 0 4.30291- 2 3.90905- 3 3.90000- 2 1.20000- 49543 2151  208
 1.54700+ 2 2.50000+ 0 4.32494- 2 4.12936- 3 3.90000- 2 1.20000- 49543 2151  209
 1.58640+ 2 2.50000+ 0 4.35913- 2 4.47131- 3 3.90000- 2 1.20000- 49543 2151  210
 1.60640+ 2 2.50000+ 0 5.42532- 2 1.51332- 2 3.90000- 2 1.20000- 49543 2151  211
 1.63900+ 2 2.50000+ 0 3.96577- 2 5.37698- 4 3.90000- 2 1.20000- 49543 2151  212
 1.64870+ 2 2.50000+ 0 4.40763- 2 4.95631- 3 3.90000- 2 1.20000- 49543 2151  213
 1.66100+ 2 2.50000+ 0 4.15687- 2 2.44872- 3 3.90000- 2 1.20000- 49543 2151  214
```

.....10	20	30	40	50	60	MAT	MF	MT	SEQ
1.66800+ 2	2.50000+ 0	4.14060- 2	2.28597- 3	3.90000- 2	1.20000-	49543	2151		215
1.68010+ 2	2.50000+ 0	4.56398- 2	6.51982- 3	3.90000- 2	1.20000-	49543	2151		216
1.69700+ 2	2.50000+ 0	4.03706- 2	1.25058- 3	3.90000- 2	1.20000-	49543	2151		217
1.71700+ 2	2.50000+ 0	4.03779- 2	1.25793- 3	3.90000- 2	1.20000-	49543	2151		218
1.72700+ 2	2.50000+ 0	4.65975- 2	7.47753- 3	3.90000- 2	1.20000-	49543	2151		219
1.73600+ 2	2.50000+ 0	4.65643- 2	7.44429- 3	3.90000- 2	1.20000-	49543	2151		220
1.74700+ 2	2.50000+ 0	4.30852- 2	3.96522- 3	3.90000- 2	1.20000-	49543	2151		221
1.75800+ 2	2.50000+ 0	4.31109- 2	3.99095- 3	3.90000- 2	1.20000-	49543	2151		222
1.77000+ 2	2.50000+ 0	4.77278- 2	8.60777- 3	3.90000- 2	1.20000-	49543	2151		223
1.80000+ 2	2.50000+ 0	4.20716- 2	2.95161- 3	3.90000- 2	1.20000-	49543	2151		224
1.80500+ 2	2.50000+ 0	4.10412- 2	1.92121- 3	3.90000- 2	1.20000-	49543	2151		225
1.81500+ 2	2.50000+ 0	4.13160- 2	2.19597- 3	3.90000- 2	1.20000-	49543	2151		226
1.83000+ 2	2.50000+ 0	4.10004- 2	1.88036- 3	3.90000- 2	1.20000-	49543	2151		227
1.84050+ 2	2.50000+ 0	4.24574- 2	3.33736- 3	3.90000- 2	1.20000-	49543	2151		228
1.84500+ 2	2.50000+ 0	4.37247- 2	4.60470- 3	3.90000- 2	1.20000-	49543	2151		229
1.86200+ 2	2.50000+ 0	4.11668- 2	2.04683- 3	3.90000- 2	1.20000-	49543	2151		230
1.86900+ 2	2.50000+ 0	4.39049- 2	4.78490- 3	3.90000- 2	1.20000-	49543	2151		231
1.88000+ 2	2.50000+ 0	4.76896- 2	8.56957- 3	3.90000- 2	1.20000-	49543	2151		232
1.90600+ 2	2.50000+ 0	4.21020- 2	2.98205- 3	3.90000- 2	1.20000-	49543	2151		233
1.91600+ 2	2.50000+ 0	4.23036- 2	3.18365- 3	3.90000- 2	1.20000-	49543	2151		234
1.92250+ 2	2.50000+ 0	4.38065- 2	4.68651- 3	3.90000- 2	1.20000-	49543	2151		235
1.93350+ 2	2.50000+ 0	4.78941- 2	8.77408- 3	3.90000- 2	1.20000-	49543	2151		236
1.95900+ 2	2.50000+ 0	3.92600- 2	1.39964- 4	3.90000- 2	1.20000-	49543	2151		237
1.96200+ 2	2.50000+ 0	4.05347- 2	1.41472- 3	3.90000- 2	1.20000-	49543	2151		238
1.96900+ 2	2.50000+ 0	4.14213- 2	2.30127- 3	3.90000- 2	1.20000-	49543	2151		239
1.97600+ 2	2.50000+ 0	4.47006- 2	5.58064- 3	3.90000- 2	1.20000-	49543	2151		240
1.99200+ 2	2.50000+ 0	4.03197- 2	1.19967- 3	3.90000- 2	1.20000-	49543	2151		241
1.99850+ 2	2.50000+ 0	4.22301- 2	3.11010- 3	3.90000- 2	1.20000-	49543	2151		242
2.02100+ 2	2.50000+ 0	3.94754- 2	3.55405- 4	3.90000- 2	1.20000-	49543	2151		243
2.03700+ 2	2.50000+ 0	3.98051- 2	6.85073- 4	3.90000- 2	1.20000-	49543	2151		244
2.05000+ 2	2.50000+ 0	4.25133- 2	3.39332- 3	3.90000- 2	1.20000-	49543	2151		245
2.06600+ 2	2.50000+ 0	4.08879- 2	1.76795- 3	3.90000- 2	1.20000-	49543	2151		246
2.08200+ 2	2.50000+ 0	4.28716- 2	3.75158- 3	3.90000- 2	1.20000-	49543	2151		247
2.09600+ 2	2.50000+ 0	4.31882- 2	4.06820- 3	3.90000- 2	1.20000-	49543	2151		248
2.10950+ 2	2.50000+ 0	4.48134- 2	5.69345- 3	3.90000- 2	1.20000-	49543	2151		249
2.11500+ 2	2.50000+ 0	4.54753- 2	6.35531- 3	3.90000- 2	1.20000-	49543	2151		250
2.13400+ 2	2.50000+ 0	4.09752- 2	1.85524- 3	3.90000- 2	1.20000-	49543	2151		251
2.14500+ 2	2.50000+ 0	4.61793- 2	7.05928- 3	3.90000- 2	1.20000-	49543	2151		252
2.17000+ 2	2.50000+ 0	4.19631- 2	2.84307- 3	3.90000- 2	1.20000-	49543	2151		253
2.20300+ 2	2.50000+ 0	4.44039- 2	5.28393- 3	3.90000- 2	1.20000-	49543	2151		254
2.21200+ 2	2.50000+ 0	4.18715- 2	2.75147- 3	3.90000- 2	1.20000-	49543	2151		255
2.22000+ 2	2.50000+ 0	4.17423- 2	2.62234- 3	3.90000- 2	1.20000-	49543	2151		256
2.24300+ 2	2.50000+ 0	4.15163- 2	2.39626- 3	3.90000- 2	1.20000-	49543	2151		257
2.25300+ 2	2.50000+ 0	4.67000- 2	7.58005- 3	3.90000- 2	1.20000-	49543	2151		258
2.26200+ 2	2.50000+ 0	4.20678- 2	2.94783- 3	3.90000- 2	1.20000-	49543	2151		259
2.27300+ 2	2.50000+ 0	4.25876- 2	3.46759- 3	3.90000- 2	1.20000-	49543	2151		260
2.28800+ 2	2.50000+ 0	4.02393- 2	1.11933- 3	3.90000- 2	1.20000-	49543	2151		261
2.31800+ 2	2.50000+ 0	4.05664- 2	1.44637- 3	3.90000- 2	1.20000-	49543	2151		262
2.32900+ 2	2.50000+ 0	4.79104- 2	8.79037- 3	3.90000- 2	1.20000-	49543	2151		263
2.34100+ 2	2.50000+ 0	4.73516- 2	8.23158- 3	3.90000- 2	1.20000-	49543	2151		264
2.36000+ 2	2.50000+ 0	4.08713- 2	1.75130- 3	3.90000- 2	1.20000-	49543	2151		265
2.37500+ 2	2.50000+ 0	4.19710- 2	2.85104- 3	3.90000- 2	1.20000-	49543	2151		266
2.38700+ 2	2.50000+ 0	4.08195- 2	1.69949- 3	3.90000- 2	1.20000-	49543	2151		267
2.39500+ 2	2.50000+ 0	4.30508- 2	3.93085- 3	3.90000- 2	1.20000-	49543	2151		268
2.41200+ 2	2.50000+ 0	4.08439- 2	1.72390- 3	3.90000- 2	1.20000-	49543	2151		269

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT  SEQ
 2.42800+ 2 2.50000+ 0 4.36700- 2 4.54996- 3 3.90000- 2 1.20000- 49543 2151  270
 2.44100+ 2 2.50000+ 0 4.05574- 2 1.43738- 3 3.90000- 2 1.20000- 49543 2151  271
 2.44600+ 2 2.50000+ 0 4.37337- 2 4.61371- 3 3.90000- 2 1.20000- 49543 2151  272
 2.46300+ 2 2.50000+ 0 4.09719- 2 1.85189- 3 3.90000- 2 1.20000- 49543 2151  273
 2.47100+ 2 2.50000+ 0 4.53449- 2 6.22489- 3 3.90000- 2 1.20000- 49543 2151  274
 2.48600+ 2 2.50000+ 0 5.19228- 2 1.28028- 2 3.90000- 2 1.20000- 49543 2151  275
 2.49700+ 2 2.50000+ 0 4.25964- 2 3.47642- 3 3.90000- 2 1.20000- 49543 2151  276
 2.15000+ 2 3.00000+ 4          2          2          0          09543 2151  277
 2.50000+ 0 9.34000- 1          0          0          2          09543 2151  278
 2.40970+ 2 0.0     + 0          0          0          2          09543 2151  279
 2.00000+ 0 0.0     + 0          2          0         54          89543 2151  280
0.0     + 0 0.0     + 0 0.0     + 0 1.00000+ 0 0.0     + 0 1.00000+ 09543 2151  281
 2.15000+ 2 1.60740+ 0 0.0     + 0 1.49490- 4 3.90000- 2 1.20000- 49543 2151  282
 5.00000+ 2 1.60650+ 0 0.0     + 0 1.49410- 4 3.90000- 2 1.20000- 49543 2151  283
 1.00000+ 3 1.60500+ 0 0.0     + 0 1.49270- 4 3.90000- 2 1.20000- 49543 2151  284
 2.00000+ 3 1.60200+ 0 0.0     + 0 1.48990- 4 3.90000- 2 1.20000- 49543 2151  285
 5.00000+ 3 1.59310+ 0 0.0     + 0 1.48150- 4 3.90000- 2 1.20000- 49543 2151  286
 1.00000+ 4 1.57820+ 0 0.0     + 0 1.46780- 4 3.90000- 2 1.20000- 49543 2151  287
 2.00000+ 4 1.54900+ 0 0.0     + 0 1.44060- 4 3.90000- 2 1.20000- 49543 2151  288
 3.00000+ 4 1.52040+ 0 0.0     + 0 1.41400- 4 3.90000- 2 1.20000- 49543 2151  289
 3.00000+ 0 0.0     + 0          2          0         54          89543 2151  290
0.0     + 0 0.0     + 0 0.0     + 0 1.00000+ 0 0.0     + 0 1.00000+ 09543 2151  291
 2.15000+ 2 1.14810+ 0 0.0     + 0 1.06780- 4 3.90000- 2 1.20000- 49543 2151  292
 5.00000+ 2 1.14750+ 0 0.0     + 0 1.06720- 4 3.90000- 2 1.20000- 49543 2151  293
 1.00000+ 3 1.14640+ 0 0.0     + 0 1.06620- 4 3.90000- 2 1.20000- 49543 2151  294
 2.00000+ 3 1.14430+ 0 0.0     + 0 1.06420- 4 3.90000- 2 1.20000- 49543 2151  295
 5.00000+ 3 1.13790+ 0 0.0     + 0 1.05820- 4 3.90000- 2 1.20000- 49543 2151  296
 1.00000+ 4 1.12730+ 0 0.0     + 0 1.04840- 4 3.90000- 2 1.20000- 49543 2151  297
 2.00000+ 4 1.10650+ 0 0.0     + 0 1.02900- 4 3.90000- 2 1.20000- 49543 2151  298
 3.00000+ 4 1.08600+ 0 0.0     + 0 1.01000- 4 3.90000- 2 1.20000- 49543 2151  299
 2.40970+ 2 0.0     + 0          1          0          4          09543 2151  300
 1.00000+ 0 0.0     + 0          2          0         54          89543 2151  301
0.0     + 0 0.0     + 0 0.0     + 0 1.00000+ 0 0.0     + 0 1.00000+ 09543 2151  302
 2.15000+ 2 2.67890+ 0 0.0     + 0    53660- 4 3.90000- 2 1.20000- 49543 2151  303
 5.00000+ 2 2.67750+ 0 0.0     + 0 6.53310- 4 3.90000- 2 1.20000- 49543 2151  304
 1.00000+ 3 2.67500+ 0 0.0     + 0 6.52710- 4 3.90000- 2 1.20000- 49543 2151  305
 2.00000+ 3 2.67000+ 0 0.0     + 0 6.51490- 4 3.90000- 2 1.20000- 49543 2151  306
 5.00000+ 3 2.65510+ 0 0.0     + 0 6.47840- 4 3.90000- 2 1.20000- 49543 2151  307
 1.00000+ 4 2.63040+ 0 0.0     + 0 6.41810- 4 3.90000- 2 1.20000- 49543 2151  308
 2.00000+ 4 2.58170+ 0 0.0     + 0 6.29940- 4 3.90000- 2 1.20000- 49543 2151  309
 3.00000+ 4 2.53400+ 0 0.0     + 0 6.18290- 4 3.90000- 2 1.20000- 49543 2151  310
 2.00000+ 0 0.0     + 0          2          0         54          89543 2151  311
0.0     + 0 0.0     + 0 0.0     + 0 2.00000+ 0 0.0     + 0 1.00000+ 09543 2151  312
 2.15000+ 2 1.60740+ 0 0.0     + 0 3.92200- 4 3.90000- 2 1.20000- 49543 2151  313
 5.00000+ 2 1.60650+ 0 0.0     + 0 3.91990- 4 3.90000- 2 1.20000- 49543 2151  314
 1.00000+ 3 1.60500+ 0 0.0     + 0 3.91620- 4 3.90000- 2 1.20000- 49543 2151  315
 2.00000+ 3 1.60200+ 0 0.0     + 0 3.90890- 4 3.90000- 2 1.20000- 49543 2151  316
 5.00000+ 3 1.59310+ 0 0.0     + 0 3.88710- 4 3.90000- 2 1.20000- 49543 2151  317
 1.00000+ 4 1.57820+ 0 0.0     + 0 3.85090- 4 3.90000- 2 1.20000- 49543 2151  318
 2.00000+ 4 1.54900+ 0 0.0     + 0 3.77970- 4 3.90000- 2 1.20000- 49543 2151  319
 3.00000+ 4 1.52040+ 0 0.0     + 0 3.70970- 4 3.90000- 2 1.20000- 49543 2151  320
 3.00000+ 0 0.0     + 0          2          0         54          89543 2151  321
0.0     + 0 0.0     + 0 0.0     + 0 2.00000+ 0 0.0     + 0 1.00000+ 09543 2151  322
 2.15000+ 2 1.14810+ 0 0.0     + 0 2.80140- 4 3.90000- 2 1.20000- 49543 2151  323
 5.00000+ 2 1.14750+ 0 0.0     + 0 2.79990- 4 3.90000- 2 1.20000- 49543 2151  324
```

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT  SEQ
 1.00000+ 3 1.14640+ 0 0.0     + 0 2.79730- 4 3.90000- 2 1.20000- 49543 2151  325
 2.00000+ 3 1.14430+ 0 0.0     + 0 2.79210- 4 3.90000- 2 1.20000- 49543 2151  326
 5.00000+ 3 1.13790+ 0 0.0     + 0 2.77650- 4 3.90000- 2 1.20000- 49543 2151  327
 1.00000+ 4 1.12730+ 0 0.0     + 0 2.75060- 4 3.90000- 2 1.20000- 49543 2151  328
 2.00000+ 4 1.10650+ 0 0.0     + 0 2.69980- 4 3.90000- 2 1.20000- 49543 2151  329
 3.00000+ 4 1.08600+ 0 0.0     + 0 2.64980- 4 3.90000- 2 1.20000- 49543 2151  330
 4.00000+ 0 0.0     + 0            2           0          54          89543 2151  331
 0.0     + 0 0.0     + 0 0.0     + 0 1.00000+ 0 0.0     + 0 1.00000+ 09543 2151  332
 2.15000+ 2 8.92980- 1 0.0     + 0 2.17890- 4 3.90000- 2 1.20000- 49543 2151  333
 5.00000+ 2 8.92510- 1 0.0     + 0 2.17770- 4 3.90000- 2 1.20000- 49543 2151  334
 1.00000+ 3 8.91680- 1 0.0     + 0 2.17570- 4 3.90000- 2 1.20000- 49543 2151  335
 2.00000+ 3 8.90010- 1 0.0     + 0 2.17160- 4 3.90000- 2 1.20000- 49543 2151  336
 5.00000+ 3 8.85030- 1 0.0     + 0 2.15950- 4 3.90000- 2 1.20000- 49543 2151  337
 1.00000+ 4 8.76790- 1 0.0     + 0 2.13940- 4 3.90000- 2 1.20000- 49543 2151  338
 2.00000+ 4 8.60580- 1 0.0     + 0 2.09980- 4 3.90000- 2 1.20000- 49543 2151  339
 3.00000+ 4 8.44660- 1 0.0     + 0 2.06100- 4 3.90000- 2 1.20000- 49543 2151  340
                                                                    9543 2   0  341
                                                                    9543 0   0  342
9.52430+ 4 2.40973+ 2            0           9>          0          09543 3   1  343
0.0     + 0 0.0     + 0            0           0          2         539543 3   1  344
           3           2          53           5          0          09543 3   1  345
 1.00000- 5 0.0     + 0 2.53000- 2 0.0     + 0 3.00000+ 4 0.0     + 09543 3   1  346
 3.00000+ 4 1.39503+ 1 4.00000+ 4 1.36815+ 1 4.23751+ 4 1.36293+ 19543 3   1  347
 6.00000+ 4 1.33125+ 1 8.00000+ 4 1.30271+ 1 8.43486+ 4 1.29700+ 19543 3   1  348
 9.68000+ 4 1.28123+ 1 1.00000+ 5 1.27729+ 1 1.09754+ 5 1.26545+ 19543 3   1  349
 1.44096+ 5 1.22546+ 1 1.50000+ 5 1.21877+ 1 1.90086+ 5 1.17450+ 19543 3   1  350
 2.00000+ 5 1.16385+ 1 2.50000+ 5 1.11200+ 1 2.68108+ 5 1.09402+ 19543 3   1  351
 2.99237+ 5 1.06419+ 1 3.00000+ 5 1.06348+ 1 3.45428+ 5 1.02240+ 19543 3   1  352
 3.50000+ 5 1.01843+ 1 3.84589+ 5 9.89382+ 0 4.00000+ 5 9.76995+ 09543 3   1  353
 5.00000+ 5 9.04866+ 0 6.00000+ 5 8.46519+ 0 7.00000+ 5 8.00652+ 09543 3   1  354
 8.00000+ 5 7.65779+ 0 9.00000+ 5 7.40215+ 0 1.00000+ 6 7.22205+ 09543 3   1  355
 1.10000+ 6 7.10112+ 0 1.20000+ 6 7.02494+ 0 1.30000+ 6 6.98180+ 09543 3   1  356
 1.40000+ 6 6.96315+ 0 1.50000+ 6 6.96181+ 0 1.60000+ 6 6.97349+ 09543 3   1  357
 2.00000+ 6 7.09788+ 0 3.00000+ 6 7.55869+ 0 4.00000+ 6 7.78966+ 09543 3   1  358
 4.60000+ 6 7.75766+ 0 5.00000+ 6 7.69013+ 0 5.40000+ 6 7.59481+ 09543 3   1  359
 6.00000+ 6 7.39327+ 0 6.50000+ 6 7.17288+ 0 7.00000+ 6 6.92662+ 09543 3   1  360
 7.30000+ 6 6.77780+ 0 8.00000+ 6 6.45612+ 0 9.00000+ 6 6.10071+ 09543 3   1  361
 1.00000+ 7 5.88111+ 0 1.10000+ 7 5.76441+ 0 1.20000+ 7 5.71313+ 09543 3   1  362
 1.40000+ 7 5.75941+ 0 2.00000+ 7 6.20766+ 0                        9543 3   1  363
                                                                    9543 3   0  364
9.52430+ 4 2.40973+ 2            0           0          0          09543 3   2  365
0.0     + 0 0.0     + 0            0           0          2         539543 3   2  366
           3           2          53           5          0          09543 3   2  367
 1.00000- 5 0.0     + 0 2.53000- 2 0.0     + 0 3.00000+ 4 0.0     + 09543 3   2  368
 3.00000+ 4 1.16494+ 1 4.00000+ 4 1.15535+ 1 4.23751+ 4 1.15354+ 19543 3   2  369
 6.00000+ 4 1.13429+ 1 8.00000+ 4 1.11503+ 1 8.43486+ 4 1.11073+ 19543 3   2  370
 9.68000+ 4 1.09079+ 1 1.00000+ 5 1.08647+ 1 1.09754+ 5 1.07319+ 19543 3   2  371
 1.44096+ 5 1.02063+ 1 1.50000+ 5 1.01176+ 1 1.90086+ 5 9.60475+ 09543 3   2  372
 2.00000+ 5 9.48756+ 0 2.50000+ 5 8.93456+ 0 2.68108+ 5 8.74708+ 09543 3   2  373
 2.99237+ 5 8.40982+ 0 3.00000+ 5 8.40024+ 0 3.45428+ 5 7.90122+ 09543 3   2  374
 3.50000+ 5 7.85179+ 0 3.84589+ 5 7.49377+ 0 4.00000+ 5 7.34285+ 09543 3   2  375
 5.00000+ 5 6.46912+ 0 6.00000+ 5 5.75066+ 0 7.00000+ 5 5.15949+ 09543 3   2  376
 8.00000+ 5 4.66173+ 0 9.00000+ 5 4.24950+ 0 1.00000+ 6 3.92523+ 09543 3   2  377
 1.10000+ 6 3.70645+ 0 1.20000+ 6 3.56142+ 0 1.30000+ 6 3.46734+ 09543 3   2  378
 1.40000+ 6 3.41674+ 0 1.50000+ 6 3.40462+ 0 1.60000+ 6 3.42035+ 09543 3   2  379
```

```
........10........20........30........40........50........60......MAT MF MT  SEQ
 2.00000+ 6 3.66108+ 0 3.00000+ 6 4.54561+ 0 4.00000+ 6 4.97496+ 09543 3  2  380
 4.60000+ 6 4.97584+ 0 5.00000+ 6 4.89755+ 0 5.40000+ 6 4.77488+ 09543 3  2  381
 6.00000+ 6 4.53621+ 0 6.50000+ 6 4.30720+ 0 7.00000+ 6 4.06662+ 09543 3  2  382
 7.30000+ 6 3.92251+ 0 8.00000+ 6 3.60355+ 0 9.00000+ 6 3.22487+ 09543 3  2  383
 1.00000+ 7 2.96070+ 0 1.10000+ 7 2.80423+ 0 1.20000+ 7 2.72862+ 09543 3  2  384
 1.40000+ 7 2.72787+ 0 2.00000+ 7 3.02801+ 0                      9543 3  2  385
                                                                  9543 3  0  386
 9.52430+ 4 2.40973+ 2          0          99          0           09543 3  4  387
 0.0     + 0-4.22000+ 4          0           0          1          489543 3  4  388
         48          .3         0           0          0           09543 3  4  389
 4.23751+ 4 0.0     + 0 6.00000+ 4 1.81360- 1 8.00000+ 4 3.14535- 19543 3  4  390
 8.43486+ 4 3.39834- 1 9.68000+ 4 5.38337- 1 1.00000+ 5 5.74020- 19543 3  4  391
 1.09754+ 5 6.74304- 1 1.44096+ 5 1.07158+ 0 1.50000+ 5 1.13092+ 09543 3  4  392
 1.90086+ 5 1.35506+ 0 2.00000+ 5 1.39234+ 0 2.50000+ 5 1.51911+ 09543 3  4  393
 2.68108+ 5 1.54840+ 0 2.99237+ 5 1.62882+ 0 3.00000+ 5 1.63314+ 09543 3  4  394
 3.45428+ 5 1.77512+ 0 3.50000+ 5 1.79025+ 0 3.84589+ 5 1.88648+ 09543 3  4  395
 4.00000+ 5 1.92359+ 0 5.00000+ 5 2.11292+ 0 6.00000+ 5 2.23759+ 09543 3  4  396
 7.00000+ 5 2.30726+ 0 8.00000+ 5 2.26419+ 0 9.00000+ 5 2.07872+ 09543 3  4  397
 1.00000+ 6 1.80013+ 0 1.10000+ 6 1.68564+ 0 1.20000+ 6 1.66963+ 09543 3  4  398
 1.30000+ 6 1.65389+ 0 1.40000+ 6 1.64703+ 0 1.50000+ 6 1.70380+ 09543 3  4  399
 1.60000+ 6 1.75573+ 0 2.00000+ 6 1.68363+ 0 3.00000+ 6 1.26222+ 09543 3  4  400
 4.00000+ 6 1.07912+ 0 4.60000+ 6 1.11914+ 0 5.00000+ 6 1.10599+ 09543 3  4  401
 5.40000+ 6 1.10897+ 0 6.00000+ 6 1.12658+ 0 6.50000+ 6 8.65475- 19543 3  4  402
 7.00000+ 6 6.69907- 1 7.30000+ 6 4.55246- 1 8.00000+ 6 2.12552- 19543 3  4  403
 9.00000+ 6 3.58337- 2 1.00000+ 7 7.60588- 3 1.10000+ 7 2.27626- 39543 3  4  404
 1.20000+ 7 8.12737- 4 1.40000+ 7 4.23551- 5 2.00000+ 7 4.97255- 59543 3  4  405
                                                                  9543 3  0  406
 9.52430+ 4 2.40973+ 2          0          99          0           09543 3 16  407
 0.0     + 0-6.36430+ 6          0           0          1          179543 3 16  408
        17          2          0           0          0           09543 3 16  409
 6.39070+ 6 0.0     + 0 7.00000+ 6 3.00000- 2 7.30000+ 6 1.50000- 19543 3 16  410
 8.00000+ 6 3.00000- 1 9.00000+ 6 4.00000- 1 1.00000+ 7 4.72770- 19543 3 16  411
 1.10000+ 7 5.37850- 1 1.20000+ 7 6.33660- 1 1.30000+ 7 6.49470- 19543 3 16  412
 1.35000+ 7 5.23890- 1 1.40000+ 7 3.60480- 1 1.50000+ 7 2.01980- 19543 3 16  413
 1.60000+ 7 9.90380- 2 1.70000+ 7 4.81390- 2 1.80000+ 7 2.21050- 29543 3 16  414
 1.90000+ 7 9.37430- 3 2.00000+ 7 3.91430- 3                      9543 3 16  415
                                                                  9543 3  0  416
 9.52430+ 4 2.40973+ 2          0          99          0           09543 3 17  417
 0.0     + 0-1.19055+ 7          0           0          1          109543 3 17  418
        10          2          0           0          0           09543 3 17  419
 1.19550+ 7 0.0     + 0 1.30000+ 7 5.53840- 2 1.35000+ 7 1.43440- 19543 3 17  420
 1.40000+ 7 2.21080- 1 1.50000+ 7 4.11200- 1 1.60000+ 7 5.45630- 19543 3 17  421
 1.70000+ 7 6.73720- 1 1.80000+ 7 7.72280- 1 1.90000+ 7 8.14260- 19543 3 17  422
 2.00000+ 7 8.35320- 1                                            9543 3 17  423
                                                                  9543 3  0  424
 9.52430+ 4 2.40973+ 2          0           0          0           09543 3 18  425
 0.0     + 0 0.0     + 0        0           0          2          529543 3 18  426
         3          2         52           5          0           09543 3 18  427
 1.00000- 5 0.0     + 0 2.53000- 2 0.0     + 0 3.00000+ 4 0.0     + 09543 3 18  428
 3.00000+ 4 6.81980- 3 4.00000+ 4 6.60000- 3 5.00000+ 4 6.50000- 39543 3 18  429
 6.00000+ 4 6.50000- 3 8.00000+ 4 6.80000- 3 1.00000+ 5 7.10000- 39543 3 18  430
 1.25000+ 5 7.80000- 3 1.50000+ 5 8.40000- 3 1.75000+ 5 9.00000- 39543 3 18  431
 2.00000+ 5 9.50000- 3 2.40000+ 5 1.08000- 2 3.00000+ 5 1.36000- 29543 3 18  432
 3.40000+ 5 1.74000- 2 4.00000+ 5 2.48000- 2 4.50000+ 5 3.46000- 29543 3 18  433
 5.00000+ 5 5.00000- 2 5.50000+ 5 7.32999- 2 6.00000+ 5 1.06000- 19543 3 18  434
```

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT  SEQ
 7.00000+ 5 2.07000- 1 7.30000+ 5 2.85000- 1 8.00000+ 5 4.43000- 19543 3 18  435
 8.40000+ 5 6.28000- 1 9.00000+ 5 8.36000- 1 9.50000+ 5 1.07000+ 09543 3 18  436
 1.00000+ 6 1.31000+ 0 1.10000+ 6 1.55000+ 0 1.20000+ 6 1.65000+ 09543 3 18  437
 1.30000+ 6 1.73000+ 0 1.40000+ 6 1.78000+ 0 1.50000+ 6 1.74000+ 09543 3 18  438
 1.60000+ 6 1.69000+ 0 2.00000+ 6 1.68000+ 0 3.00000+ 6 1.73000+ 09543 3 18  439
 3.90000+ 6 1.73000+ 0 4.60000+ 6 1.66000+ 0 5.40000+ 6 1.71000+ 09543 3 18  440
 6.00000+ 6 1.73000+ 0 6.30000+ 6 1.99000+ 0 7.00000+ 6 2.22000+ 09543 3 18  441
 7.30000+ 6 2.25000+ 0 8.00000+ 6 2.34000+ 0 9.00000+ 6 2.44000+ 09543 3 18  442
 1.00000+ 7 2.44000+ 0 1.10000+ 7 2.42000+ 0 1.20000+ 7 2.31000+ 09543 3 18  443
 1.30000+ 7 2.26000+ 0 1.40000+ 7 2.45000+ 0 1.80000+ 7 2.35000+ 09543 3 18  444
 2.00000+ 7 2.30000+ 0                                             9543 3 18  445
                                                                   9543 3  0  446
 9.52430+ 4 2.40973+ 2          0          99          0           09543 3 37  447
 0.0     + 0-1.84880+ 7          0           0          1           39543 3 37  448
          3           2          0           0          0           09543 3 37  449
 1.85650+ 7 0.0     + 0 1.90000+ 7 1.21660- 5 2.00000+ 7 1.04990- 29543 3 37  450
                                                                   9543 3  0  451
 9.52430+ 4 2.40973+ 2          0           1          0           09543 3 51  452
 0.0     + 0-4.22000+ 4          0           0          1          489543 3 51  453
        48           3          0           0          0           09543 3 51  454
 4.23751+ 4 0.0     + 0 6.00000+ 4 1.81360- 1 8.00000+ 4 3.14535- 19543 3 51  455
 8.43486+ 4 3.39834- 1 9.68000+ 4 3.89368- 1 1.00000+ 5 4.01653- 19543 3 51  456
 1.09754+ 5 4.35044- 1 1.44096+ 5 4.90751- 1 1.50000+ 5 4.94773- 19543 3 51  457
 1.90086+ 5 5.29363- 1 2.00000+ 5 5.35212- 1 2.50000+ 5 5.52736- 19543 3 51  458
 2.68108+ 5 5.55195- 1 2.99237+ 5 5.50815- 1 3.00000+ 5 5.50305- 19543 3 51  459
 3.45428+ 5 5.25501- 1 3.50000+ 5 5.22025- 1 3.84589+ 5 4.95395- 19543 3 51  460
 4.00000+ 5 4.83715- 1 5.00000+ 5 4.11278- 1 6.00000+ 5 3.47196- 19543 3 51  461
 7.00000+ 5 2.90897- 1 8.00000+ 5 2.34102- 1 9.00000+ 5 1.77846- 19543 3 51  462
 1.00000+ 6 1.28264- 1 1.10000+ 6 1.00160- 1 1.20000+ 6 8.27856- 29543 3 51  463
 1.30000+ 6 6.83421- 2 1.40000+ 6 5.65874- 2 1.50000+ 6 4.84700- 29543 3 51  464
 1.60000+ 6 4.12293- 2 2.00000+ 6 1.76809- 2 3.00000+ 6 1.49831- 39543 3 51  465
 4.00000+ 6 1.32630- 4 4.60000+ 6 3.52552- 5 5.00000+ 6 1.44498- 59543 3 51  466
 5.40000+ 6 6.22201- 6 6.00000+ 6 1.89971- 6 6.50000+ 6 5.63839- 79543 3 51  467
 7.00000+ 6 1.74764- 7 7.30000+ 6 6.95853- 8 8.00000+ 6 9.67552- 99543 3 51  468
 9.00000+ 6 3.10891-10 1.00000+ 7 1.36060-11 1.10000+ 7 9.04566-139543 3 51  469
 1.20000+ 7 7.66278-14 1.40000+ 7 2.63524-16 2.00000+ 7 2.26169-199543 3 51  470
                                                                   9543 3  0  471
 9.52430+ 4 2.40973+ 2          0           2          0           09543 3 52  472
 0.0     + 0-8.40000+ 4          0           0          1          459543 3 52  473
        45           3          0           0          0           09543 3 52  474
 8.43486+ 4 0.0     + 0 9.68000+ 4 1.48969- 1 1.00000+ 5 1.66606- 19543 3 52  475
 1.09754+ 5 2.11171- 1 1.44096+ 5 2.94317- 1 1.50000+ 5 3.02812- 19543 3 52  476
 1.90086+ 5 3.36491- 1 2.00000+ 5 3.41002- 1 2.50000+ 5 3.53036- 19543 3 52  477
 2.68108+ 5 3.54999- 1 2.99237+ 5 3.48740- 1 3.00000+ 5 3.47482- 19543 3 52  478
 3.45428+ 5 3.30778- 1 3.50000+ 5 3.28273- 1 3.84589+ 5 3.15413- 19543 3 52  479
 4.00000+ 5 3.10084- 1 5.00000+ 5 2.73894- 1 6.00000+ 5 2.35336- 19543 3 52  480
 7.00000+ 5 1.97145- 1 8.00000+ 5 1.56579- 1 9.00000+ 5 1.16420- 19543 3 52  481
 1.00000+ 6 8.18259- 2 1.10000+ 6 6.21804- 2 1.20000+ 6 5.00819- 29543 3 52  482
 1.30000+ 6 4.04112- 2 1.40000+ 6 3.28388- 2 1.50000+ 6 2.77280- 29543 3 52  483
 1.60000+ 6 2.33516- 2 2.00000+ 6 9.98131- 3 3.00000+ 6 9.48002- 49543 3 52  484
 4.00000+ 6 9.75511- 5 4.60000+ 6 2.80012- 5 5.00000+ 6 1.18664- 59543 3 52  485
 5.40000+ 6 5.19556- 6 6.00000+ 6 1.58542- 6 6.50000+ 6 4.65451- 79543 3 52  486
 7.00000+ 6 1.42532- 7 7.30000+ 6 5.63823- 8 8.00000+ 6 7.75539- 99543 3 52  487
 9.00000+ 6 2.48687-10 1.00000+ 7 1.09674-11 1.10000+ 7 7.32802-139543 3 52  488
 1.20000+ 7 6.21127-14 1.40000+ 7 2.13086-16 2.00000+ 7 1.80931-199543 3 52  489
```

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT  SEQ
                                                 9543 3  0  490
9.52430+ 4 2.40973+ 2          0          3          0      09543 3 53  491
0.0     + 0-9.64000+ 4         0          0          1     449543 3 53  492
        44             3       0          0          0      09543 3 53  493
9.68000+ 4 0.0     + 0 1.00000+ 5 5.76090- 3 1.09754+ 5 2.80892- 29543 3 53  494
1.44096+ 5 1.08573- 1 1.50000+ 5 1.18618- 1 1.90086+ 5 1.80339- 19543 3 53  495
2.00000+ 5 1.91922- 1 2.50000+ 5 2.34923- 1 2.68108+ 5 2.45651- 19543 3 53  496
2.99237+ 5 2.58907- 1 3.00000+ 5 2.59113- 1 3.45428+ 5 2.66627- 19543 3 53  497
3.50000+ 5 2.66649- 1 3.84589+ 5 2.64553- 1 4.00000+ 5 2.62869- 19543 3 53  498
5.00000+ 5 2.44683- 1 6.00000+ 5 2.20718- 1 7.00000+ 5 1.95059- 19543 3 53  499
8.00000+ 5 1.64151- 1 9.00000+ 5 1.29565- 1 1.00000+ 6 9.65305- 29543 3 53  500
1.10000+ 6 7.74639- 2 1.20000+ 6 6.54918- 2 1.30000+ 6 5.50776- 29543 3 53  501
1.40000+ 6 4.62990- 2 1.50000+ 6 4.01479- 2 1.60000+ 6 3.44927- 29543 3 53  502
2.00000+ 6 1.51864- 2 3.00000+ 6 1.34662- 3 4.00000+ 6 1.24992- 49543 3 53  503
4.60000+ 6 3.40450- 5 5.00000+ 6 1.41675- 5 5.40000+ 6 6.19702- 69543 3 53  504
6.00000+ 6 1.93037- 6 6.50000+ 6 5.80146- 7 7.00000+ 6 1.81472- 79543 3 53  505
7.30000+ 6 7.25815- 8 8.00000+ 6 1.01890- 8 9.00000+ 6 3.31506-109543 3 53  506
1.00000+ 7 1.46963-11 1.10000+ 7 9.86905-13 1.20000+ 7 8.42655-149543 3 53  507
1.40000+ 7 2.93686-16 2.00000+ 7 2.59627-19                      9543 3 53  508
                                                 9543 3  0  509
9.52430+ 4 2.40973+ 2          0          4          0      09543 3 54  510
0.0     + 0-1.09300+ 5         0          0          1     429543 3 54  511
        42             3       0          0          0      09543 3 54  512
1.09754+ 5 0.0     + 0 1.44096+ 5 1.77943- 1 1.50000+ 5 1.88394- 19543 3 54  513
1.90086+ 5 2.37586- 1 2.00000+ 5 2.44786- 1 2.50000+ 5 2.66892- 19543 3 54  514
2.68108+ 5 2.71527- 1 2.99237+ 5 2.74307- 1 3.00000+ 5 2.73575- 19543 3 54  515
3.45428+ 5 2.69461- 1 3.50000+ 5 2.67935- 1 3.84589+ 5 2.61813- 19543 3 54  516
4.00000+ 5 2.59100- 1 5.00000+ 5 2.36544- 1 6.00000+ 5 2.08080- 19543 3 54  517
7.00000+ 5 1.77581- 1 8.00000+ 5 1.43293- 1 9.00000+ 5 1.07999- 19543 3 54  518
1.00000+ 6 7.68036- 2 1.10000+ 6 5.89675- 2 1.20000+ 6 4.79177- 29543 3 54  519
1.30000+ 6 3.89614- 2 1.40000+ 6 3.18706- 2 1.50000+ 6 2.70646- 29543 3 54  520
1.60000+ 6 2.29101- 2 2.00000+ 6 9.96100- 3 3.00000+ 6 9.87831- 49543 3 54  521
4.00000+ 6 1.06070- 4 4.60000+ 6 3.11122- 5 5.00000+ 6 1.33595- 59543 3 54  522
5.40000+ 6 5.92190- 6 6.00000+ 6 1.83291- 6 6.50000+ 6 5.42240- 79543 3 54  523
7.00000+ 6 1.66874- 7 7.30000+ 6 6.61656- 8 8.00000+ 6 9.14708- 99543 3 54  524
9.00000+ 6 2.95527-10 1.00000+ 7 1.31447-11 1.10000+ 7 8.84748-139543 3 54  525
1.20000+ 7 7.54232-14 1.40000+ 7 2.61059-16 2.00000+ 7 2.25788-199543 3 54  526
                                                 9543 3  0  527
9.52430+ 4 2.40973+ 2          0          5          0      09543 3 55  528
0.0     + 0-1.43500+ 5         0          0          1     419543 3 55  529
       41              3       0          0          0      09543 3 55  530
1.44096+ 5 0.0     + 0 1.50000+ 5 2.63266- 2 1.90086+ 5 7.12796- 29543 3 55  531
2.00000+ 5 7.79836- 2 2.50000+ 5 1.01781- 1 2.68108+ 5 1.07980- 19543 3 55  532
2.99237+ 5 1.16962- 1 3.00000+ 5 1.16941- 1 3.45428+ 5 1.25289- 19543 3 55  533
3.50000+ 5 1.25362- 1 3.84589+ 5 1.28649- 1 4.00000+ 5 1.29872- 19543 3 55  534
5.00000+ 5 1.31420- 1 6.00000+ 5 1.24395- 1 7.00000+ 5 1.12341- 19543 3 55  535
8.00000+ 5 9.49151- 2 9.00000+ 5 7.43471- 2 1.00000+ 6 5.46290- 29543 3 55  536
1.10000+ 6 4.31258- 2 1.20000+ 6 3.58827- 2 1.30000+ 6 2.97671- 29543 3 55  537
1.40000+ 6 2.47706- 2 1.50000+ 6 2.13462- 2 1.60000+ 6 1.83012- 29543 3 55  538
2.00000+ 6 8.27701- 3 3.00000+ 6 8.86117- 4 4.00000+ 6 1.01406- 49543 3 55  539
4.60000+ 6 3.06487- 5 5.00000+ 6 1.33898- 5 5.40000+ 6 6.02788- 69543 3 55  540
6.00000+ 6 1.89783- 6 6.50000+ 6 5.66430- 7 7.00000+ 6 1.75315- 79543 3 55  541
7.30000+ 6 6.97041- 8 8.00000+ 6 9.69859- 9 9.00000+ 6 3.16673-109543 3 55  542
1.00000+ 7 1.42588-11 1.10000+ 7 9.69719-13 1.20000+ 7 8.33198-149543 3 55  543
1.40000+ 7 2.91904-16 2.00000+ 7 2.59176-19                      9543 3 55  544
```

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT  SEQ
                                                 9543 3  0  545
 9.52430+ 4 2.40973+ 2          0          6          0    09543 3 56  546
 0.0     + 0-1.89300+ 5          0          0          1   399543 3 56  547
         39          3          0          0          0    09543 3 56  548
 1.90086+ 5 0.0     + 0 2.00000+ 5 1.43258- 3 2.50000+ 5 9.74496- 39543 3 56  549
 2.68108+ 5 1.30508- 2 2.99237+ 5 1.88583- 2 3.00000+ 5 1.90004- 29543 3 56  550
 3.45428+ 5 2.73143- 2 3.50000+ 5 2.80236- 2 3.84589+ 5 3.37754- 29543 3 56  551
 4.00000+ 5 3.61921- 2 5.00000+ 5 4.79101- 2 6.00000+ 5 5.29289- 29543 3 56  552
 7.00000+ 5 5.30277- 2 8.00000+ 5 4.83747- 2 9.00000+ 5 4.02674- 29543 3 56  553
 1.00000+ 6 3.10886- 2 1.10000+ 6 2.55612- 2 1.20000+ 6 2.19981- 29543 3 56  554
 1.30000+ 6 1.87697- 2 1.40000+ 6 1.59956- 2 1.50000+ 6 1.40651- 29543 3 56  555
 1.60000+ 6 1.22712- 2 2.00000+ 6 5.85794- 3 3.00000+ 6 6.96849- 49543 3 56  556
 4.00000+ 6 8.68785- 5 4.60000+ 6 2.73076- 5 5.00000+ 6 1.21948- 59543 3 56  557
 5.40000+ 6 5.59509- 6 6.00000+ 6 1.79858- 6 6.50000+ 6 5.42763- 79543 3 56  558
 7.00000+ 6 1.69249- 7 7.30000+ 6 6.75430- 8 8.00000+ 6 9.47972- 99543 3 56  559
 9.00000+ 6 3.13789-10 1.00000+ 7 1.43487-11 1.10000+ 7 9.88759-139543 3 56  560
 .20000+ 7 8.58327-14 1.40000+ 7 3.05572-16 2.00000+ 7 2.80915-199543 3 56  561
                                                 9543 3  0  562
 9.52430+ 4 2.40973+ 2          0          7          0    09543 3 57  563
 0.0     + 0-2.67000+ 5          0          0          1   369543 3 57  564
         36          3          0          0          0    09543 3 57  565
 2.68108+ 5 0.0     + 0 2.99237+ 5 6.02290- 2 3.00000+ 5 6.14951- 29543 3 57  566
 3.45428+ 5 1.30901- 1 3.50000+ 5 1.36363- 1 3.84589+ 5 1.69121- 19543 3 57  567
 4.00000+ 5 1.79650- 1 5.00000+ 5 2.07692- 1 6.00000+ 5 1.98955- 19543 3 57  568
 7.00000+ 5 1.76799- 1 8.00000+ 5 1.46271- 1 9.00000+ 5 1.12625- 19543 3 57  569
 1.00000+ 6 8.18891- 2 1.10000+ 6 6.44278- 2 1.20000+ 6 5.37576- 29543 3 57  570
 1.30000+ 6 4.49090- 2 1.40000+ 6 3.77043- 2 1.50000+ 6 3.27752- 29543 3 57  571
 1.60000+ 6 2.82962- 2 2.00000+ 6 1.27327- 2 3.00000+ 6 1.09794- 39543 3 57  572
 4.00000+ 6 9.28699- 5 4.60000+ 6 2.39518- 5 5.00000+ 6 9.60100- 69543 3 57  573
 5.40000+ 6 4.04699- 6 6.00000+ 6 1.20365- 6 6.50000+ 6 3.52218- 79543 3 57  574
 7.00000+ 6 1.08057- 7 7.30000+ 6 4.27935- 8 8.00000+ 6 5.88474- 99543 3 57  575
 9.00000+ 6 1.86015-10 1.00000+ 7 8.04715-12 1.10000+ 7 5.29369-139543 3 57  576
 1.20000+ 7 4.45019-14 1.40000+ 7 1.50934-16 2.00000+ 7 1.25768-199543 3 57  577
                                                 9543 3  0  578
 9.52430+ 4 2.40973+ 2          0          8          0    09543 3 58  579
 0.0     + 0-2.98000+ 5          0          0          1   359543 3 58  580
         35          3          0          0          0    09543 3 58  581
 2.99237+ 5 0.0     + 0 3.00000+ 5 5.22688- 3 3.45428+ 5 9.92470- 29543 3 58  582
 3.50000+ 5 1.07626- 1 3.84589+ 5 1.62384- 1 4.00000+ 5 1.81462- 19543 3 58  583
 5.00000+ 5 2.43369- 1 6.00000+ 5 2.44054- 1 7.00000+ 5 2.20570- 19543 3 58  584
 8.00000+ 5 1.83519- 1 9.00000+ 5 1.41343- 1 1.00000+ 6 1.02549- 19543 3 58  585
 1.10000+ 6 8.04640- 2 1.20000+ 6 6.69678- 2 1.30000+ 6 5.58378- 29543 3 58  586
 1.40000+ 6 4.68232- 2 1.50000+ 6 4.06830- 2 1.60000+ 6 3.51240- 29543 3 58  587
 2.00000+ 6 1.58570- 2 3.00000+ 6 1.39080- 3 4.00000+ 6 1.20214- 49543 3 58  588
 4.60000+ 6 3.13779- 5 5.00000+ 6 1.26766- 5 5.40000+ 6 5.38464- 69543 3 58  589
 6.00000+ 6 1.61884- 6 6.50000+ 6 4.77035- 7 7.00000+ 6 1.47090- 79543 3 58  590
 7.30000+ 6 5.83925- 8 8.00000+ 6 8.07056- 9 9.00000+ 6 2.56864-109543 3 58  591
 1.00000+ 7 1.11898-11 1.10000+ 7 7.40131-13 1.20000+ 7 6.24616-149543 3 58  592
 1.40000+ 7 2.13068-16 2.00000+ 7 1.79991-19                    9543 3 58  593
                                                 9543 3  0  594
 9.52430+ 4 2.40973+ 2          0          9          0    09543 3 59  595
 0.0     + 0-3.44000+ 5          0          0          1   339543 3 59  596
         33          3          0          0          0    09543 3 59  597
 3.45428+ 5 0.0     + 0 3.50000+ 5 7.99525- 3 3.84589+ 5 5.53774- 29543 3 59  598
 4.00000+ 5 7.62757- 2 5.00000+ 5 1.65205- 1 6.00000+ 5 1.89623- 19543 3 59  599
```

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT  SEQ
 7.00000+ 5 1.82718- 1 8.00000+ 5 1.57989- 1 9.00000+ 5 1.24922- 19543 3 59  600
 1.00000+ 6 9.24412- 2 1.10000+ 6 7.36828- 2 1.20000+ 6 6.21433- 29543 3 59  601
 1.30000+ 6 5.24256- 2 1.40000+ 6 4.44300- 2 1.50000+ 6 3.89815- 29543 3 59  602
 1.60000+ 6 3.39554- 2 2.00000+ 6 1.57583- 2 3.00000+ 6 1.43978- 39543 3 59  603
 4.00000+ 6 1.28659- 4 4.60000+ 6 3.41394- 5 5.00000+ 6 1.39404- 59543 3 59  604
 5.40000+ 6 5.98158- 6 6.00000+ 6 1.82460- 6 6.50000+ 6 5.43268- 79543 3 59  605
 7.00000+ 6 1.68969- 7 7.30000+ 6 6.73862- 8 8.00000+ 6 9.39855- 99543 3 59  606
 9.00000+ 6 3.02355-10 1.00000+ 7 1.32959-11 1.10000+ 7 8.85864-139543 3 59  607
 1.20000+ 7 7.52172-14 1.40000+ 7 2.59348-16 2.00000+ 7 2.24062-199543 3 59  608
                                                          9543 3  0  609
 9.52430+ 4 2.40973+ 2          0          98          0          09543 3 91  610
 0.0     + 0-3.83000+ 5          0           0          1         319543 3 91  611
        31          3           0           0          0          09543 3 91  612
 3.84589+ 5 0.0     + 0 4.00000+ 5 4.37278- 3 5.00000+ 5 1.50923- 19543 3 91  613
 6.00000+ 5 4.16301- 1 7.00000+ 5 7.01117- 1 8.00000+ 5 9.34999- 19543 3 91  614
 9.00000+ 5 1.05339+ 0 1.00000+ 6 1.05411+ 0 1.10000+ 6 1.09960+ 09543 3 91  615
 1.20000+ 6 1.18260+ 0 1.30000+ 6 1.24939+ 0 1.40000+ 6 1.30971+ 09543 3 91  616
 1.50000+ 6 1.41254+ 0 1.60000+ 6 1.50580+ 0 2.00000+ 6 1.57234+ 09543 3 91  617
 3.00000+ 6 1.25193+ 0 4.00000+ 6 1.07813+ 0 4.60000+ 6 1.11886+ 09543 3 91  618
 5.00000+ 6 1.10587+ 0 5.40000+ 6 1.10892+ 0 6.00000+ 6 1.12656+ 09543 3 91  619
 6.50000+ 6 8.65470- 1 7.00000+ 6 6.69906- 1 7.30000+ 6 4.55246- 19543 3 91  620
 8.00000+ 6 2.12552- 1 9.00000+ 6 3.58337- 2 1.00000+ 7 7.60588- 39543 3 91  621
 1.10000+ 7 2.27626- 3 1.20000+ 7 8.12737- 4 1.40000+ 7 4.23551- 59543 3 91  622
 2.00000+ 7 4.97255- 5                                            9543 3 91  623
                                                          9543 3  0  624
 9.52430+ 4 2.40973+ 2          0          99          0          09543 3102  625
 0.0     + 0 0.0     + 0        0           0          2         539543 3102  626
           3           2       53           5          0          09543 3102  627
 1.00000- 5 0.0     + 0 2.53000- 2 0.0     + 0 3.00000+ 4 0.0     + 09543 3102  628
 3.00000+ 4 2.29411+ 0 4.00000+ 4 2.12151+ 0 4.23751+ 4 2.08742+ 09543 3102  629
 6.00000+ 4 1.78174+ 0 8.00000+ 4 1.55553+ 0 8.43486+ 4 1.51609+ 09543 3102  630
 9.68000+ 4 1.35905+ 0 1.00000+ 5 1.32706+ 0 1.09754+ 5 1.24092+ 09543 3102  631
 1.44096+ 5 9.68451- 1 1.50000+ 5 9.30792- 1 1.90086+ 5 7.75950- 19543 3102  632
 2.00000+ 5 7.49148- 1 2.50000+ 5 6.55312- 1 2.68108+ 5 6.32742- 19543 3102  633
 2.99237+ 5 5.89700- 1 3.00000+ 5 5.87777- 1 3.45428+ 5 5.30631- 19543 3102  634
 3.50000+ 5 5.24872- 1 3.84589+ 5 4.91052- 1 4.00000+ 5 4.78710- 19543 3102  635
 5.00000+ 5 4.16622- 1 6.00000+ 5 3.70934- 1 7.00000+ 5 3.32773- 19543 3102  636
 8.00000+ 5 2.88874- 1 9.00000+ 5 2.37921- 1 1.00000+ 6 1.86686- 19543 3102  637
 1.10000+ 6 1.59028- 1 1.20000+ 6 1.43897- 1 1.30000+ 6 1.30572- 19543 3102  638
 1.40000+ 6 1.19384- 1 1.50000+ 6 1.13389- 1 1.60000+ 6 1.07411- 19543 3102  639
 2.00000+ 6 7.31739- 2 3.00000+ 6 2.08586- 2 4.00000+ 6 5.57456- 39543 3102  640
 4.60000+ 6 2.68247- 3 5.00000+ 6 1.58748- 3 5.40000+ 6 9.64553- 49543 3102  641
 6.00000+ 6 4.78281- 4 6.50000+ 6 2.09771- 4 7.00000+ 6 9.61225- 59543 3102  642
 7.30000+ 6 4.85471- 5 8.00000+ 6 1.19655- 5 9.00000+ 6 9.13531- 79543 3102  643
 1.00000+ 7 9.93301- 8 1.10000+ 7 1.68099- 8 1.20000+ 7 3.70232- 99543 3102  644
 1.40000+ 7 9.79497-11 2.00000+ 7 4.10014-11                      9543 3102  645
                                                          9543 3  0  646
 9.52430+ 4 2.40973+ 2          0           0          0          09543 3251  647
 0.0     + 0 0.0     + 0        0           0          1         539543 3251  648
          53          3         0           0          0          09543 3251  649
 1.00000- 5 2.74348- 3 2.53000- 2 2.74348- 3 1.00000+ 2 2.74348- 39543 3251  650
 3.00000+ 4 3.16023- 2 4.00000+ 4 4.24499- 2 4.23751+ 4 4.50354- 29543 3251  651
 6.00000+ 4 6.45423- 2 8.00000+ 4 8.63014- 2 8.43486+ 4 9.09552- 29543 3251  652
 9.68000+ 4 1.04773- 1 1.00000+ 5 1.08222- 1 1.09754+ 5 1.18644- 19543 3251  653
 1.44096+ 5 1.54811- 1 1.50000+ 5 1.60822- 1 1.90086+ 5 1.98380- 19543 3251  654
```

```
.....10.....20.....30.....40.....50.....60.....MAT MF MT  SEQ
 2.00000+ 5 2.06972- 1 2.50000+ 5 2.46402- 1 2.68108+ 5 2.59179- 19543 3251  655
 2.99237+ 5 2.80383- 1 3.00000+ 5 2.80930- 1 3.45428+ 5 3.10047- 19543 3251  656
 3.50000+ 5 3.12848- 1 3.84589+ 5 3.32937- 1 4.00000+ 5 3.41278- 19543 3251  657
 5.00000+ 5 3.87704- 1 6.00000+ 5 4.23052- 1 7.00000+ 5 4.49848- 19543 3251  658
 8.00000+ 5 4.71610- 1 9.00000+ 5 4.90020- 1 1.00000+ 6 5.05259- 19543 3251  659
 1.10000+ 6 5.14767- 1 1.20000+ 6 5.22145- 1 1.30000+ 6 5.30283- 19543 3251  660
 1.40000+ 6 5.39692- 1 1.50000+ 6 5.50128- 1 1.60000+ 6 5.62083- 19543 3251  661
 2.00000+ 6 6.17182- 1 3.00000+ 6 7.18603- 1 4.00000+ 6 7.70180- 19543 3251  662
 4.60000+ 6 7.89695- 1 5.00000+ 6 7.99152- 1 5.40000+ 6 8.06143- 19543 3251  663
 6.00000+ 6 8.12902- 1 6.50000+ 6 8.15865- 1 7.00000+ 6 8.16903- 19543 3251  664
 7.30000+ 6 8.16804- 1 8.00000+ 6 8.15353- 1 9.00000+ 6 8.13481- 19543 3251  665
 1.00000+ 7 8.16756- 1 1.10000+ 7 8.27977- 1 1.20000+ 7 8.44788- 19543 3251  666
 1.40000+ 7 8.81233- 1 2.00000+ 7 9.43680- 1                      9543 3251  667
                                                                  9543 3   0 668
                                                                  9543 0   0 669
 9.52430+ 4 2.40973+ 2          0          0          2          09543 5 16 670
 6.39070+ 6 0.0     + 0          0          9          1          29543 5 16 671
          2          2          0          0          0          09543 5 16 672
 6.39070+ 6 5.00000- 1 2.00000+ 7 5.00000- 1                      9543 5 16 673
 0.0     + 0 0.0     + 0          0          0          1          29543 5 16 674
          2          5          0          0          0          09543 5 16 675
 6.39070+ 6 5.06260+ 5 2.00000+ 7 8.80891+ 5                      9543 5 16 676
 6.39070+ 6 0.0     + 0          0          9          1          29543 5 16 677
          2          2          0          0          0          09543 5 16 678
 6.39070+ 6 5.00000- 1 2.00000+ 7 5.00000- 1                      9543 5 16 679
 0.0     + 0 0.0     + 0          0          0          1          99543 5 16 680
          9          2          0          0          0          09543 5 16 681
 6.39070+ 6 3.76900+ 4 7.00000+ 6 1.16700+ 5 8.00000+ 6 1.95800+ 59543 5 16 682
 1.00000+ 7 3.21500+ 5 1.20000+ 7 4.19500+ 5 1.40000+ 7 4.99900+ 59543 5 16 683
 1.60000+ 7 5.69300+ 5 1.80000+ 7 6.31100+ 5 2.00000+ 7 6.87300+ 59543 5 16 684
                                                                  9543 5   0 685
 9.52430+ 4 2.40973+ 2          0          0          3          09543 5 17 686
 1.19550+ 7 0.0     + 0          0          9          1          29543 5 17 687
          2          2          0          0          0          09543 5 17 688
 1.19550+ 7 3.33334- 1 2.00000+ 7 3.33334- 1                      9543 5 17 689
 0.0     + 0 0.0     + 0          0          0          1          39543 5 17 690
          3          5          0          0          0          09543 5 17 691
 1.19550+ 7 6.85370+ 5 1.50000+ 7 7.65422+ 5 2.00000+ 7 8.80891+ 59543 5 17 692
 1.19550+ 7 0.0     + 0          0          9          1          29543 5 17 693
          2          2          0          0          0          09543 5 17 694
 1.19550+ 7 3.33333- 1 2.00000+ 7 3.33333- 1                      9543 5 17 695
 0.0     + 0 0.0     + 0          0          0          1          39543 5 17 696
          3          5          0          0          0          09543 5 17 697
 1.19550+ 7 4.77200+ 5 1.50000+ 7 5.44700+ 5 2.00000+ 7 6.87600+ 59543 5 17 698
 1.19550+ 7 0.0     + 0          0          9          1          29543 5 17 699
          2          2          0          0          0          09543 5 17 700
 1.19550+ 7 3.33333- 1 2.00000+ 7 3.33333- 1                      9543 5 17 701
 0.0     + 0 0.0     + 0          0          0          1          39543 5 17 702
          3          2          0          0          0          09543 5 17 703
 1.19550+ 7 3.84000+ 4 1.50000+ 7 2.10400+ 5 2.00000+ 7 4.54100+ 59543 5 17 704
                                                                  9543 5   0 705
 9.52430+ 4 2.40973+ 2          0          0          1          09543 5 18 706
-2.00000+ 7 0.0     + 0          0          7          1          29543 5 18 707
          2          2          0          0          0          09543 5 18 708
 1.00000- 5 1.00000+ 0 2.00000+ 7 1.00000+ 0                      9543 5 18 709
```

```
........10........20........30........40........50........60......MAT MF MT  SEQ
 0.0     + 0 0.0     + 0           0           0           1          29543 5 18  710
           2           2           0           0           0          09543 5 18  711
 1.00000- 5 1.37700+ 6 2.00000+ 7 1.37700+ 6                           9543 5 18  712
                                                                       9543 5  0  713
 9.52430+ 4 2.40973+ 2           0           0           1          09543 5 91  714
 3.84589+ 5 0.0     + 0           0           9           1          29543 5 91  715
           2           2           0           0           0          09543 5 91  716
 3.84589+ 5 1.00000+ 0 2.00000+ 7 1.00000+ 0                           9543 5 91  717
 0.0     + 0 0.0     + 0           0           0           1          39543 5 91  718
           3           5           0           0           0          09543 5 91  719
 3.84589+ 5 1.39565+ 5 2.00000+ 6 2.91837+ 5 2.00000+ 7 8.80891+     59543 5 91  720
                                                                       9543 5  0  721
                                                                       9543 0  0  722
```